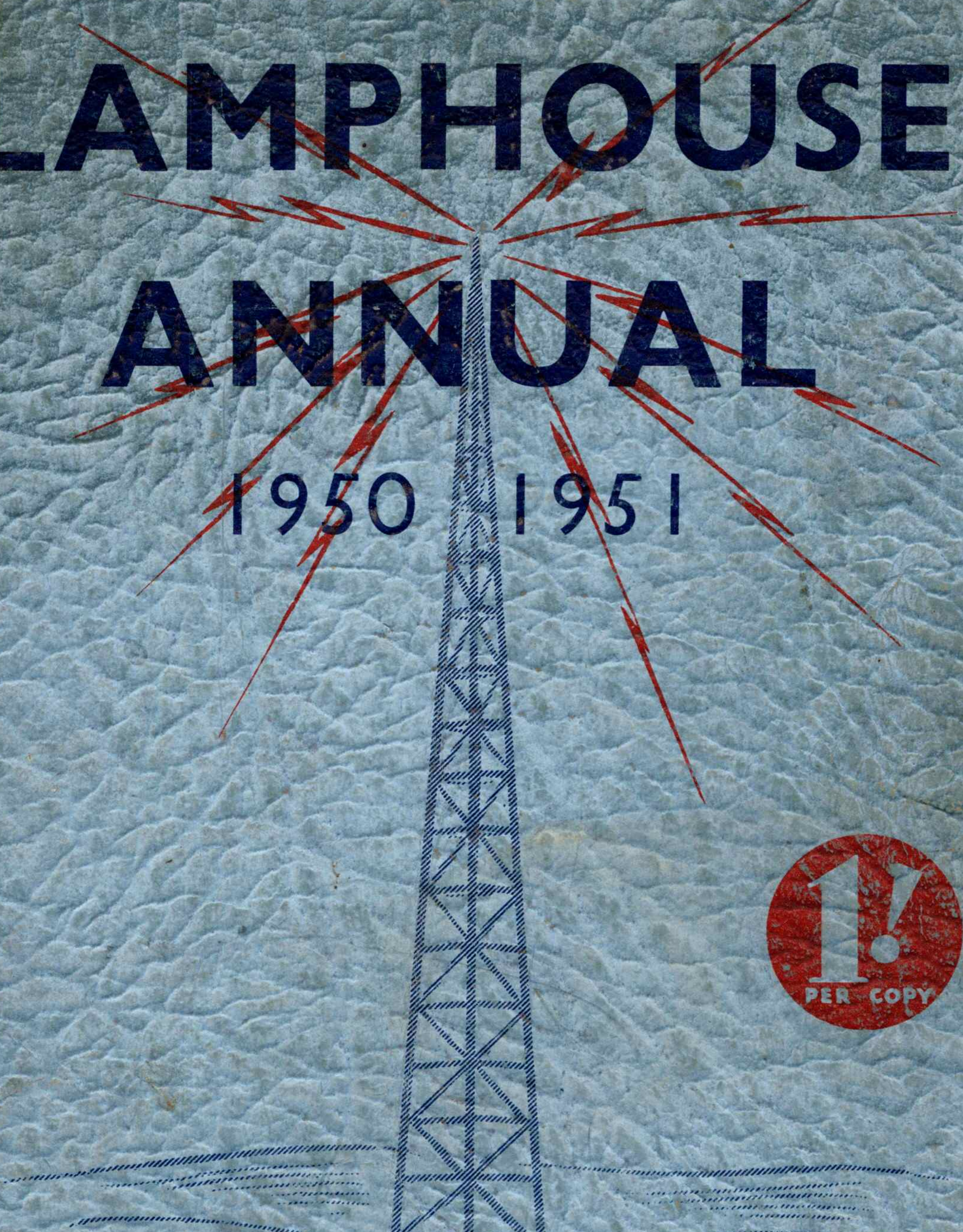
LAMPHOUSE ANNUAL

1950 1951



1/-
PER COPY

NEW ZEALAND'S LEADING
RADIO & ELECTRICAL HOUSE

THE LAMPHOUSE ANNUAL 1950 1951

FOREWORD

RECORDS BROKEN—Yes thanks to you, our customers all previous sales records were broken last-year. Thanks for your business. Thanks for the hundreds of letters and telegrams in appreciation of our last Annual. Thanks to our staff who gave another year of faithful service.

Yes it makes us very humble when we think of all those to whom we owe our thanks.

Humble with a resolve to repay with a better Annual and better service during 1950-51. A few prices are up, many prices are down, but Lamphouse values remain the best, so does our MONEY BACK GUARANTEE which reads:

"Any goods that are in any way unsuitable may be returned within seven days (from receipt) and your money will be refunded in full".

ELECTRIC LAMP HOUSE LIMITED
11 MANNERS STREET - - - - - - - - - - - - WELLINGTON, C.I.

INDEX

Page
ACCUMULATORS 36, 46
Adaptors, Electrical 30, 31, 36
Adaptors, Speaker Extension 77
Adhesives 19, 53
Aerial Eliminator 42
Aerial Equipment .. Inside Front Cover
16, 42, 43, 44, 45, 49, 85
Aerial Relay 56
Aerials, Motor-car 43
Aerial Tuning Unit 44, 45, 51
Aeritrol 44
Alligator Clips 73
Aluminium Solder 60
Ammeters 80
Amplifiers 38
Anchor Lugs 72
Appliance Cords 34
Appliance Plugs 32
Appliance Terminals 34
Applicators—Massage Vibrators ... 7
Arrestors, Lightning 42
Audio Transformers 76
Auto Cable—Inside Front Cover, .. 37
Auto Lamps 36

BAGS 51, 84
Bakelite, Sheet, Rod and Tube 50, 70
Banana Plugs and Sockets 73
Bargain Parcels 15, 47, 57, 66, 72
Bases, Chassis 54, 55, 68, 71
Bases, Coil 51, 66
Baskets Pressure Cooker 14
Batteries, Accumulators 36, 46
Batteries, "A", "B" and "C" 46
Batteries, Motor-Car 36
Batteries, Torch 21
Battery Cable—Inside Front Cover . 75
Battery Clips 73
Battery Chargers 47, 79
Battery Charger, Spares 47
Battery Radio Set—Outside Back Cover
39, 41
Battery Testers 37, 79
Battery Tonic "Tarmag" 46
Battery Welders and Spares 17
Beads, Insulating 34
Bearings 54
Bed Lamps 24, 25, 26
Bed Warmers 8
Bells and Bell Material—Outside Back
Cover, 16, 33, 53
Belts, Rubber, ... 34
Bezels Indicator 63
Bicycle Lamps 21
Bits-Soldering Iron 60
Blocks, Wood 32
Blocks, Era 32
Boards, Terminal 5
Bobbins, Element 35
Bobbins, I.F. 65
Bolts and Nuts 54, 74
Books 42, 50, 83
Boxes, Switch 30
Boxes Tool 19, 84
Boxes Valve 84

Page
Bowl Buttons and Hooks 29
Bowls Mixer 35
Brackets Dial Lamp 51, 63, 73
Brackets Lamps 24, 25, 29
Brackets Hardware 54, 74
Brass Wire—Inside Front Cover
Braid, Shielded 75
Brushes, Carbon 34
Brushes Cleaning (Vacuum) 6
Buckles (Cable Clips) 31
Bulbs (Electric Lamp) 22, 67
Bulbs, Motor Car 36
Bulbs, Charger 47
Bulbs, Panel 51, 62, 63
Bulbs Torch 21
Bushings 54, 55
Button Insulators 43
Buttons Bowl 29
Buzzers, Electric —Outside Back Cover,
33, 56

CABINETS, ... 57, 60, 84
Cables (All Types (See "Wire"))
Cable Clips 31, 55
Cable Reels —Inside Front Cover.
Cable Lug 55
Cabtyre Flex—Inside Front Cover, .. 32
Caps, Element 35
Caps, Headphones 48
Carbon Brushes 34
Carbon Piles 52
Carbon Resistors 15, 52, 68
Carbons For Health Lamps 34
Car Lamps (Motor) and Accessories,
36, 37
Casein Glue 19
Catwhiskers 48
"C" Batteries 46
Ceiling Flanges (Galleries) 29
Ceiling Plates 29
Ceiling Roses 30
Ceiling Switches and Cords 30
Cells, Dry 46
Cement Adhesives 19, 53
Chain 29
Chargers, Battery 47, 79
Chassis Bases 54, 55, 68, 71
Chassis Plugs and Sockets 53, 71
Chimes, Door 33
Chokes 50, 56, 71
Circuit Books 83
Clamps, Earth 44
Cleaners, Vacuum 85
Cleat Insulators 43
Clips Battery 73
Clips Cable 31, 54
Clips Earth 44
Clips Fahnstock 72
Clips Grid, Screen 54, 73
Clips Shade 27
Clocks, Electric 6, 15
Clothes Dryers 10, 11
Coffee Percolators 15
Coil Bases 51

Page
Coil Dope 19
Coil Former 65
Coils Radio 48, 51, 64, 65
Coils, Speaker Transformer 76
Coils, Transmitter 51, 85
Coil Terminal Bases 51, 65
Coil Tuning Units 45, 51, 64
Condensers, Couplers 52, 71
Condensers, Generator 37
Condensers, Hardware 52, 71
Condensers, Radio 51, 52, 66, 67
Connecting Wire —Inside Front Cover,
75
Connectors Wire 16, 31, 53, 71
Conversion Adaptors 30
Cookers Electric —Outside Back Cover,
8
Cookers Pressure 14
Coppers Electric 10
Coppered Staples 43
Cord Connectors 16, 31
Cord Dial 63
Cords, Appliance 34
Cords, Ceiling Switch 30
Cords, Headphones 48
Cords, Lighting Extension 24
Cords, Microphone —Inside Front Cover
Cord, Switches —Inside Front Cover, 30
Counters 20
Couplers, Condensers 52, 71
Crocodile Clips 73
Crystal Microphones 6
Crystal Pickups 57
Crystal Sets and Parts 48, 65
Cupboard Heaters 11
Cushions, Headphones 48
Cycle Lamps and Spares 21

DARNALITES 6
Data Book 83
D.C.C. and S.C.C. Wire 16, 75
Decoration Lamps 5
Detectors, Crystal 48
Dial Accessories 15, 52, 62, 73
Dial Knobs 15, 52, 63
Dial Lamps 51, 62, 63
Dials 15, 52, 61, 62, 63
Dial Unit and Receiver Gang 51
Distributor Suppressors 37
Dome Nuts 74
Door Chimes and Bells —Outside Back
Cover, 33
Dry Cells 46
Dryers, Clothes 10, 11
Dryers, Hair 23
Dry Rectifiers 47, 55
Dry Shavers 23
Dynamo Cycle Outfit 21

EAR CAPS, TELEPHONE 48
Earphones 20, 48
Earth Clips 44
Earth Wires 44
Ebonite Rod and Tube 50, 70
Egg Insulators 43, 49
Electric Bed Comfort (Warmers) .. 8

Page
Pick-Up Needles 5, 57
Piles, Carbon 52
Pillow Speakers 77
Plastic Kitsets 85
Plastic Lampshades 27, 28
Plastic Wood 19
Plates, Aerial-Earth 43
Plates, Dial 15, 52, 62, 63
Plates, Glass 74
Plates, Switch 30, 53
Plugs Appliance 32
Plugs and Sockets, Chassis .. 53, 71, 73
Plugs, Banana 73
Plugs, Electric 5, 30, 31, 84
Plugs, Phone 69
Plugs, Speaker 53, 69
Plugs, Wander 55
Poker Work Machines and Spares .. 17
Pole Changers —Inside Back Cover.
Polishers, Floor 85
Portable Radios —Outside Back Cover, 41
Portable Set Aerials 44, 64
Potentiometers 68
Power Supply, Vibrator 47
Power Packs 47
Power Transformers 76
Pressure Cookers 14
Prods, Test 79
Pulleys 18, 43, 54
Pushback Wire 75
Pushes, Bell 16, 33, 53
Putty 19

"QUICKMEND" 19

RADIATOR ELEMENTS 35
Radiators, Elctric 8, 9
Radio Batteries 46
Radio Circuit Book 83
Radio Coils 64, 65, 85
Radio Data Book 83
Radio Frequency Chokes 50
Radio Instruction Course 83
Radiometer 80
Radio Set Cabinets 60, 84
Radio Sets, Crystal 48
Radio Sets, Electric 39, 40, 41
Radio Sets, Portable —Outside Back Cover
Range Elements 34
Range Fuses 32
Ranges, Electric —Outside Back Cover
Range Spares 32
Range Switches 16, 30
Razors, Electrical 23
Reading Lamps 24, 25, 26
Record Changers 57
Rectifiers (For Chargers) 47
Rectifiers Meter 55
Red Diamond Crystal Detectors 48
Reels, Metal —Inside Front Cover
Reflectors 28
Relays ...... Inside Back Cover, 56
Remote Control Units 56
Resin Cored Solder 60
Resistance Boxes —Inside Back Cover
Resistance Wire —Inside Front Cover, 6, 75
Resistors, Fixed 15, 52, 68
Resistors, Variable —Inside Back Cover, 16, 68
Resistors, Wirewound 16, 52, 68
Rheostats ..... Inside Back Cover, 68
Rivets 55
Rods, Brass Aerial 49
Rod, Insulating 50, 70
Rods, Pendant 25
Rods, Threaded 74
Rope 16
Rubber Grommets 54, 74
Rubber Washers and Rings 34, 74

SADDLES 54
Satchels, Canvas 84
Scales, Dial 52, 62
Screen Grid Clips 54, 73
Screened Wire 75
Screws (Flush Switch) 30
Screws 54, 74
Screw Drivers 5, 19
Screw Eyes (Insulated) 8, 31
Sets, Kit 58, 59
Sets, Radio —Outside Back Cover, 39 40, 41, 48
Sewing Machine Motors 18
Sewing Machines Toy 33
Shackle Insulators 43
Shackles Iron 16
Shade Holders and Clips 27, 29
Shades, Lamp 6, 27, 28
Shaft Adaptors and Connectors .. 52, 71
Shavers, Electric 23
Shaver Spares 23
Shaver Transformer 76
Shielded Wire —Inside Front Cover, 75

Page
Shielded Braid 75
Shields, Valve 53, 74
Shunts, Meter 79
Silk, Speaker 77
Sockets, Banana 73
Sockets, Chassis 51, 71, 73
Sockets, Lamp 31
Sockets, Valve 53
Sockets, Vibrator 47
Soldering Irons and Material ... 19, 60
Soldering Iron Spares 60
Soldering Lugs 73
Solder Liquid 19
Solenoids 53
Sounders .... Inside Back Cover.
Spacers, Metal 54
Spaghetti Tubing 75
Spark Plug Suppressors 37
Speaker Cabinets 57, 60, 77
Speaker Cable 77
Speaker Cord Tips 69
Speaker Extension Adaptors 77
Speaker Extension Cord —Inside Front Cover
Speakers Extension 5, 77
Speaker Plugs 53, 69
Speakers 5, 77, 78
Speaker Silk 77
Speaker Transformers 76
Spiral, Elements 35
Sprayers Vacuum Cleaner 6
Spring Aerials 42
Springs, Carbon Brush 34
Springs 34, 35, 54
Staples 33, 43
Standard Lamps 24, 25
Stands, Iron —Outside Back Cover
Stay Mast Sets 49
Step-Down Transformers 76
Stoves, Table 8
Sun Lamps 8
Surprise Packets 57
Suppressors, Noise 16, 37
Supremacy Game 20
Switches, Electric 16, 30, 31, 53
Switches, Knife 43
Switches Lever —Inside Back Cover, 70
Switches Motor Car 30, 53
Switches Radio —Inside Back Cover, 16, 53, 70

TABLE LAMPS 24, 25, 26
Table Lamp Switches 30
Table Stoves 8
Tank Heater Elements 35
Tape, Insulating 75
Tapons 31
Tarmag 46
Telegraph Equipment .... Inside Back Cover, 20
Telephone Ear Pieces 20
Telephone Hand Sets 20, 56
Telephones, Head 48
Terminal Boards 5, 73
Terminals, Appliance 34
Terminals, Radio 16, 55, 69, 72, 73
Terminal Strips 72
Testing Equipment and Meters ... 13, 37, 47, 55, 79, 80
Test Prods 79
Threaded Rods 74
Thermometers 6
Tilters Shade 29
Timers, Minute 85
Tip Jacks 69, 72
Toasters, Electric 12
Toasters, Elements and Spares 35
Toaster Trays 13
Toggle Switches 53, 70
Tone Controls (Potentiometers) 68
Tool Boxes 19, 84
Tools, Vibro 17
Torch Bulb Holders 73
Torches 5, 6, 15, 16, 21
Torch Batteries 21
Torch Lamps 21
Toy Motors 18
Toys and Games 20, 33
Transformers, Audio 76
Transformers, Bell 33
Transformers, Filament 50, 76
Transformers, Headphones 50, 76
Transformers, I.F. 51, 64, 65
Transformers, Microphone ... 50, 56, 76
Transformers, Output 76, 78
Transformers, Power 76
Transformers, Shavers 76
Transformers, Speaker 76, 78
Transformers, Step-Down 76
Transformers, Valve Testing 76
Transformers, Vibrator 50, 76
Transmitter Exciter Unit 51
Transmitters Telegraph —Inside Back Cover
Transmitting Coils 51
Traps, Wave 44, 45

Page
Trays, Toaster 13
Trickle Chargers 47
Trimmer Condensers 52, 66, 67
Trouble Lamps 16, 37
Tru-Rip Flex 32
Tubes, Lead-in 43
Tubes (Valves) 62, 81, 82, 83, 84
Tubing Insulating 50, 65, 70, 75
Tubing, Spaghetti 75
Tubular, Condensers 52, 66
Tuners, Radio 45
Tuning Units 51, 64
Tuning Indicators 79
Tungar Bulbs 47

ULTRA-VIOLET LAMPS 8
Units, Remote Control 56
Units, Tuning 51
Urns, Electric 14

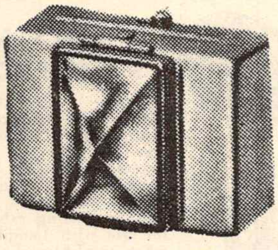
VACUUM CLEANERS 85
Vacuum Cleaner Spares 6, 34
Valve Boxes 84
Valves 62, 81, 82, 83, 84
Valve Shields 53, 74
Valve Sockets 53, 69
Valve Testers 79
Valve Testing Transformers 76
Variable Condensers 51, 52, 66, 67
Variable Resistance 68
Varnish, Insulating 19
Vibrator Chokes 49
Vibrators, Massage 7
Vibrators, Radio 47, 50
Vibrator Transformers 50, 76
Vibro-Tools 17
Voltage Dividers 68
Voltage Reducers 50
Volt Meters 80
Volume Controls 68

WALL BRACKETS 24, 29
Wall Plugs 5, 31
Wander Plugs 55
Warmers, Bed 8
Warmers, Foot 8
Washers, Insulating 54, 74
Washers, Metal 54, 55
Washers, Rubber 34, 54, 74
Washing Boilers, Electric 10
Watch Cases 52
Water Heating Appliances ... 6, 10, 11, 13, 14
Water Heating Elements 14, 35
Watertight Fittings 29
Water Putty 19
Wave Change Switches —Inside Back Cover, 53, 70
Wave Traps 44, 45
Wavers, Hair and Spares 23
Welders, Electric (Battery) and Spares 17
Well Glass Fittings 29
Windings, Element 35
Windings, Transformers 76
Wing Screws 74, 85
Wire, Aerial —Inside Front Cover, 16 42
Wire, Brass ...... Inside Front Cover
Wires, Battery Cable ..... Inside Front Cover, 75
Wire Bell 33, 75
Wire Cabtyre ..... Inside Front Cover 32
Wire Connecting .. Inside Front Cover 75
Wire D.C.C. 16, 75
Wire Earth 42
Wire Enamelled 75
Wire Field Cable .. Inside Front Cover
Wire Flexible .. Inside Front Cover, 32
Wire Fuse 32
Wire Lead-In .. Inside Front Cover, 42
Wireless Jug Elements 6
Wireless Sets .. Outside Back Cover, 39, 40, 41, 48
Wire Microphone .. Inside Front Cover 75
Wire, Motor Car Inside Front Cover, 37
Wire, Pushback 75
Wire, Range 32
Wire, Resistance .. Inside Front Cover, 6, 75
Wire, Shielded .. Inside Front Cover, 75
Wire, Speaker .. Inside Front Cover, 75, 77
Wire, Tinned Copper .... Inside Front Cover
Wire, Tinned Earth 44
Wire, T.R.S. ...... Inside Front Cover
Wire, V.I.R. .... Inside Front Cover, 32 85
Wire, Wound Resistors 6, 75
Wood Blocks 32
Wood Plastic 19
Wood Screws 74

THE LAMPHOUSE CATALOGUE

1950 1951

GEM HANDBAG TORCH



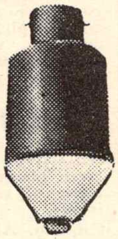
For pocket or handbag. Effective diamond-shaped glass lens, with plated bezel. Assorted metal cases anodised finish. Dimensions, 2¼in. x 1¾in. x 1⅜in.

Cat. No. AT820A—Complete with battery **5/11**

Battery used. Cat. No. AB203 **11D. each**

NIGHTLIGHT

Burns for 600 hours and only consumes one unit of electricity. Save on your light bills—save electricity. Leave a light burning all night at practically no cost. Plugs into any light socket. Transforms 230 volt current to 6 volts and torch-type bulb screws into end. Length 3½ inches. Diameter, 1½ inches. Ideal for sick-rooms, night lights, passages, lavs., etc., etc.

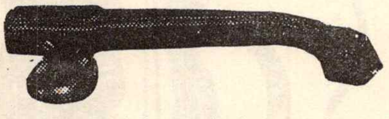


Cat. No. AF750—Nightlight complete with bulb.

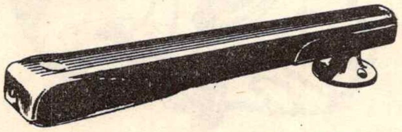
8/2

GOLDRING PICK-UPS

Combine advantages of light weight with standard model. Have high outputs, good bass response and easy needle changing. Wide-frequency range and light record wear. Suitable for use with steel, fibre, or sapphire needles.



Bantam model, brown plastic. Cat. No. AP312 .. .. **30/9 each**



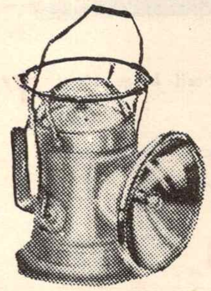
Super ivory plastic model. Cat. No. AP313 .. .. **40/6 each**

Goldring Sapphire Trailer-type Pick-up needles.

ALL PRICES IN THIS CATALOGUE ARE SUBJECT TO ALTERATION WITHOUT NOTICE.

DUALITE LANTERN

Amazing all-purpose lantern with two light sources—a spot beam with 800ft. penetration or a brilliant general purpose light. Controlled by change-over switch. Uses a 6-volt lantern battery giving many hours of unfailing light at very low cost. Reversible wide arm handle and grip handle at the rear. All cadmium steel body, grey finish, built very strongly. Complete with 2 bulbs and battery. Dimensions, 9in. x 6½in. x 7in. Weight, 2¼lb.

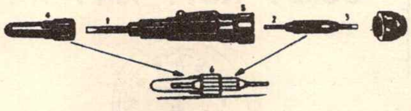


Cat. No. AT790A— **40/6**

Spare batteries. Cat. No. AB223— **6/6**

NEW GOODS OFFERED ON THIS PAGE HAVE NOT PREVIOUSLY BEEN IN THE LAMPHOUSE ANNUAL.

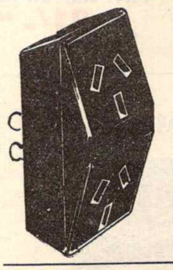
3-IN-1



The large blade (1) is firmly fixed in barrel (5) and cannot be removed. The combined medium and small blades (2 and 3) can be used separately, or to give better grip, inserted either way into protector cap (4) which is specially shaped inside to hold them firmly.

Screwdrivers, plastic case. Three different size blades invaluable for those small jobs at home and in workshop where you want a fine screwdriver for small slots, etc. Clip for vest pocket.

Cat. No. AU3B **2/3**



NEW DOUBLE PLUG

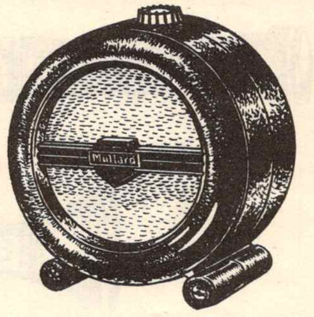
New type of double, three-pin plug which allows 2 appliances etc., to be used from one socket.

Cat. No. AG435— **4/9 each**

MONEY BACK GUARANTEE

Any goods which prove in any way unsuitable may be returned within 7 days from receipt and your money will be Refunded in Full!

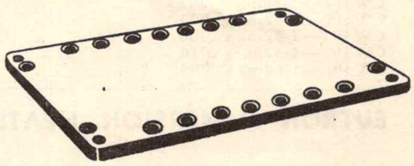
EXTENSION SPEAKER



Mullard Extension Speaker in moulded plastic case, 8in. in diameter, equipped with 5in. P.M. speaker complete with volume control. Colours: brown, cream, pastel green, light mottled red, dark mottled red.

Cat. No. AS998 .. .. .. **64/6**

TERMINAL BOARDS



Terminal Boards of moulded insulating material provided with holes for mounting resistors, condensers, etc. Size, 4¼in. x 2¼in. x 3-16in. thick.

Cat. No. AX1089 .. .. **9D. each**

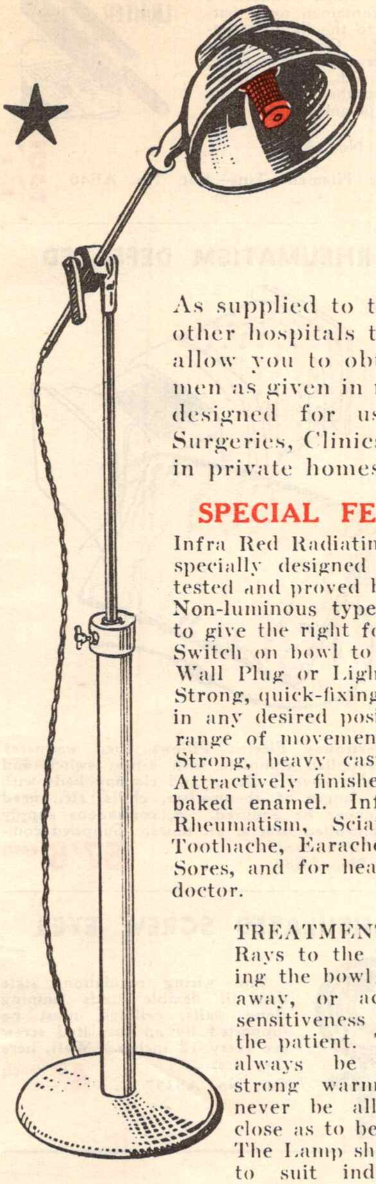
PIFCO DECORATION SETS

PIFCO FAIRY LIGHTS

Comprising 12 lights with bell-shaped bakelite shades in assorted pastel colours and decorated with 12 different nursery rhyme scenes in artistic colourings. Complete with 17 feet of flex, spare bulb and adaptor to fit light socket. Attractively cartoned; for 200 to 250 volts.

Cat. No. AF932 .. .. **39/6 set**

THE "HAYMAN" INFRA RED HEALTH LAMPS

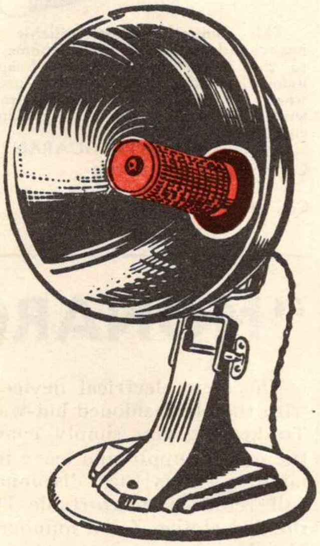


As supplied to the Auckland Hospital Board and many other hospitals throughout New Zealand. These Lamps allow you to obtain exactly the same Infra Red Treatmen as given in many of the leading hospitals. Specially designed for use in Hospital Massage Departments, Surgeries, Clinics, Convalescent Homes, Institutions, and in private homes.

SPECIAL FEATURES INCORPORATED ARE:

Infra Red Radiating Element, emitting genuine Infra Red Rays, specially designed for heavy duty performance and long life; tested and proved by medical experts.
Non-luminous type Element. Special brightly polished reflector to give the right focus of rays to location under treatment.
Switch on bowl to control the Element without disconnection of Wall Plug or Light Socket.
Strong, quick-fixing swivel joints which hold the lamp down firmly in any desired position, vertical or horizontal, with a very wide range of movement.
Strong, heavy cast base prevents standard from falling over. Attractively finished in bright nickel-plating, and wrinkle-finish baked enamel. Infra Red Ray treatment is recommended for Rheumatism, Sciatica, Neuritis, Gout, Neuralgia, Lumbago, Toothache, Earache, Sprains, Insomnia, Chilblains, Boils, Septic Sores, and for healing open wounds and lacerations. Ask your doctor.

TREATMENT: Apply the Rays to the bare skin, keeping the bowl about 18 inches away, or according to the sensitiveness of the skin of the patient. The Rays should always be a comfortably strong warmth, and should never be allowed to be so close as to be unbearably hot. The Lamp should be adjusted to suit individual requirements.



Duration of treatment should be according to medical advice, but 20 to 30 minutes is usually long enough for the first treatment, 2 or 3 times daily, according to the ailment and measure of relief received. Longer treatments can be given when accustomed to the Rays.

Before commencing treatment, the patient should be made comfortable on a bed or chair so as not to be weary during the period of treatment

FLOOR TYPE	TABLE TYPE
Cat. No. AE85—	Cat. No. AE86—
£11/2/6	£5/7/9

Supplied Complete with Flexible Cord.

SPARE ELEMENTS ARE AVAILABLE—

Cat. No. AE87 . . . . 25/9

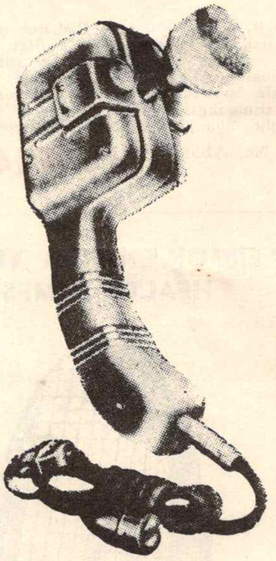
Invigorating Health

When you use the new "PIFCO" Electric Massager VIBRATOR

The clear, fine textured youthful complexion that everyone admires and every woman envies originates deep in the tissues below the surface. Unless this tissue is constantly and healthily renewed by the blood stream the visible skin loses its fresh colour and vitality. Age lines develop and curves tend to sag. The Pifco Electric Massager stimulates a healthy circulation of the blood, invigorating the tissue, washing away waste products, keeping it vital and healthy. It tones up the underlying muscles, promotes the removal of fatigue poisons, and stimulates the dispersal of unwanted fatty accumulations. It loosens up tight, strained shoulder and neck muscles; sends relaxed waves over tired faces; tingles the scalp to a lively glow, makes the skin feel fresh and alive, and it is so simple and easy to use. Eases pain and acts as a tonic to the system.
An instruction booklet giving full details plus Two Charts on how and where to use for different ailments is supplied with each Vibrator.

MODERN BEAUTY TREATMENT IN YOUR OWN HOME!

For A.C. Current—on 200 to 250 Volts Inclusive



Four Special Applicators:

FOR **FACE** MASSAGE.
The sponge rubber applicator for gentle massage. It sends soothing and relaxing waves over tired faces.

FOR **NECK** MASSAGE.
The flat rubber applicator loosens-up strained or tight shoulder and neck muscles, and is also used for bust development.

FOR **BODY** MASSAGE.
If your body is fatigued or your limbs ache, the hard applicator will drive away that lethargy and make the muscles supple and active.

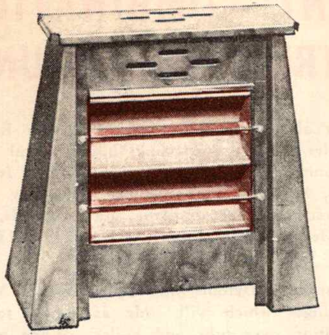
FOR **SCALP** MASSAGE.
The spiked rubber applicator imparts strength and gives lustre to the hair. Dandruff is removed and the scalp made healthy. It lifts your head into the clouds.

Beautifully finished in Ivory Plastic Casing.

Cat. No. AE79 . . . . £5/5/6

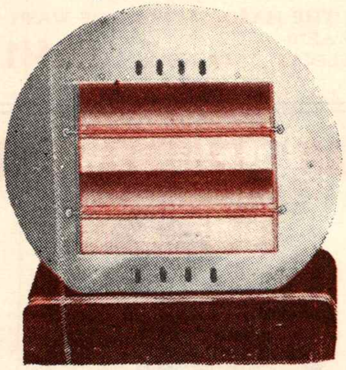
MAKE THE HOME COSIER!

ELECTROWAY, MODEL 72



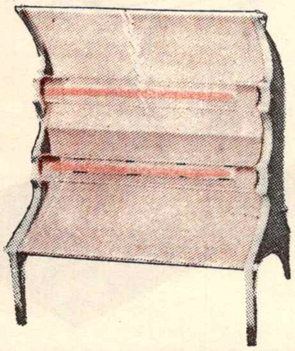
A superior 2 kw. fire with large welded steel frame and 15 amp. switch.
Cat. No. AE369 .. .. **77/6**

ELECTROWAY "PLINTH" FIRE, 2000 watts.



Chromed brass disc, 15in. diam. x 18g., on coloured steel plinth, with chromed relief. With two reflector elements as illustrated. Switch and two yards 3-core flexible fitted to each fire.
Cat. No. AE368 .. .. **£6/4/6**

ELECTROWAY "BEAM" FIRE

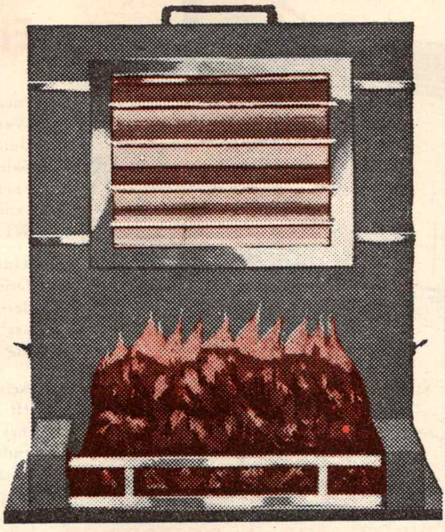


Concentrates the radiation in one direction. High radiant efficiency. 2 kw., with switch controlling one bar.
Cat. No. AE370 .. .. **112/-**

PERMIT

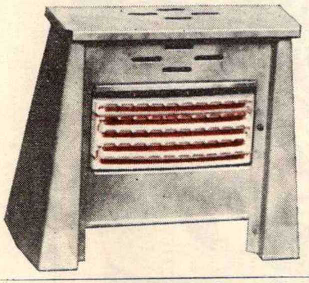
A permit to purchase a Radiator is necessary for some provinces in New Zealand. Consult your local power board before ordering.

ELECTROWAY IMITATION COAL FIRE



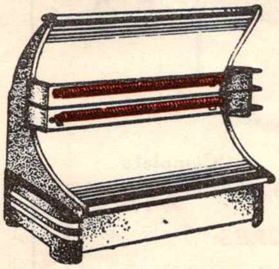
Provided with 2 super elements, each of 1000 watts, which can be operated independently by means of the high-grade English switches incorporated. Gives realistic impression of coal fire. Finished in sprayed silver with chromium-plated reflectors and trimmings. Small fan revolving inside red coals gives "smoke" effect.
Cat. No. AE367 .. .. **£14/5/-**

"ELECTROWAY" TILE RADIATOR



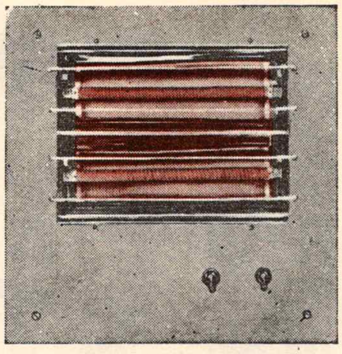
A well constructed, serviceable, Radiator that will give years of trouble-free comfort. 1000 watt Tile Element. Finished in a wide range of flecked colours, including Red, Slate, Green, Cream, etc. Complete with 4 feet flexible 3 core cord.
Cat. No. AE371 .. .. .. **45/9**

"ST. MARTINS" RADIATOR



A gracefully designed Radiator incorporating the maximum reflector surface for greatest heat radiation. Chrome reflector and trimmings. Base crackle finished. 2000 watts. Complete with 5ft. flex.
Cat. No. AE352 .. .. **59/-**

ELECTROWAY WALL INSET FIRE



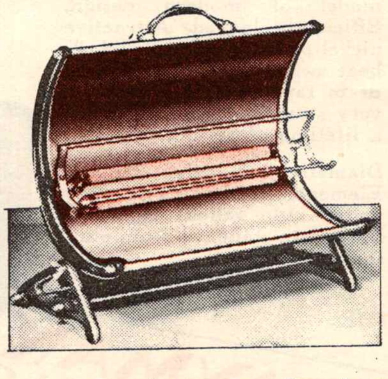
This inset fire with its flush-fitting chromium-plated front panel adapted to accommodate an opening in standard tile slabbing, is most suitable for the modern type of building. The chromium-plated reflector and the pencil rod elements complete the handsome design, entirely obviating that "flatness" of appearance so customary with many wall heaters. The dimensions for the two types are as follows: 1kw., Overall 16in. x 5in., Back Box 16in. x 4in.; 2kw., Overall 16½in. x 16½in.; Back Box 16in. x 16in.

Cat. No. AE365—1kw. type .. **63/-**

Cat. No. AE366—2 kw. type .. **120/-**

The fires above are not supplied with heater flex, as they are designed for permanent building-in.

"ULTIMATE" DE LUXE RADIATOR



Chrome reflector. 2000-watt. Fire of attractive appearance. Frame finished in black. Has two elements, each of 1000 watts, and switch so that one element can be turned off if not required. Complete with 3-wire flex.

Cat. No. AE375—Two Elements **90/6 each**

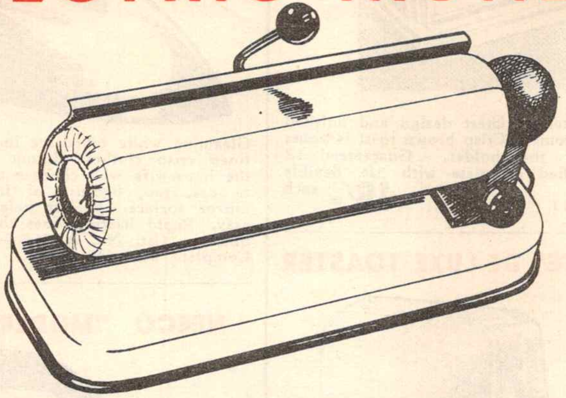
Cat. No. AE376—1 Element .. **78/- each**

SWITCHES

All our Two Element Radiators are fitted with a switch so that either one or two elements can be used.

Ironing Day can be an EASY Day

IF YOU USE AN "IRONETTE" ELECTRIC IRONER



With the "IRONETTE" any woman can easily cut one or two hours off her usual ironing time; can iron from 50 to 200 lbs. of laundry each week without the least bit of fatigue.

You, like thousands of other housewives, can dispense with the ironing day "lame back," sore feet, and that "all in" feeling, by investing in an "IRONETTE."

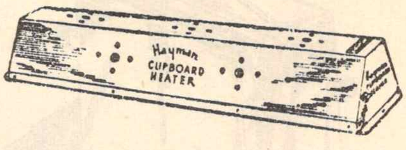
***Here are* 5 FEATURES of the HOUSEWIFE'S DELIGHT:—**

1. It irons everything—sheets, shirts, ruffled curtains, cottons, silks, woollens, etc.
2. It's portable. Dimensions: Length 29in., height 10in., width 15in. Plugs into an ordinary Hotpoint.
3. It's Safe; it's easy to Operate.
4. It's Economical — uses the same amount of electricity as the ordinary household iron.
5. Each "Ironette" is covered by a 12 months' guarantee.

***Iron at Leisure—Have More Time for Pleasure* with an "IRONETTE"**

Cat. No. AE280 **£29**

ELECTRIC CUPBOARD HEATERS



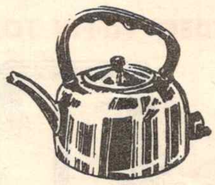
Keep your Household Linen dry and free from dampness. Here is a Cupboard Heater that will operate at almost negligible cost; can be mounted on the floor or screwed to the wall in a vertical or horizontal position. Emits warm, dry air from a large low temperature heating surface.

Operates for seven hours for One Penny

Size actual unit: Length 2ft., Diameter 2in.; protecting Gauze Surround, 4in. high x 5in. wide; 230v.—150 watts. Supplied without flex.

Cat. No. AE289 .. .. .. **45/-**

NEW SPEEDEE KETTLE

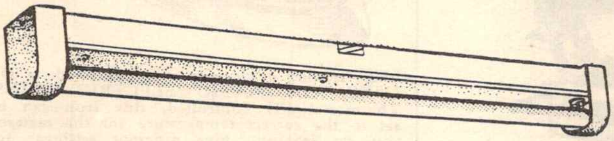


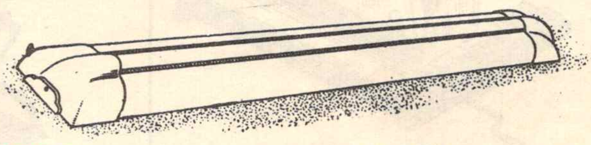
Three-pint, Chrome-plated, complete with cord and appliance plug.
Cat. No. AE193 .. .. **77/6** each

LAMPHOUSE GUARANTEE

Any goods that prove in any way unsuitable may be returned undamaged within seven days from receipt and your money will be refunded in full.

FLUORESCENT LAMPS





SAFE — RELIABLE — MODERN

The well-known Neon fittings and lamps available from stock. Our fluorescent tubes are available in two lengths—two feet and four feet. The two foot tubes consume 50 watts and give about as much light as a 75-watt lamp, and the four foot consumes 40 watts and gives more light than a 100-watt lamp.

All fittings are complete with everything needed to install them by an electrician, but they can also be supplied complete with flex and plug for plugging into an existing light point at an extra charge of 7/6.

Cream enamel fittings, ceiling mounting.

TUBE COLOURING

Tubes can be supplied in three different tonings—Daylight, Warm-white or White. Give your preference when ordering.

Cat. No. AL710A—Single 4ft. ..	**£5/-/-**
Cat. No. AL709A—Single 2ft.	**£4/18/-**
Cat. No. AL711A—Double 4ft.	**£7/19/-**

Decorative type, with attractive transluscent reflector.

Cat. No. AL714A—Single 4ft.	**£8/18/-**
Cat. No. AL712A—Single 2ft.	**£7/7/-**

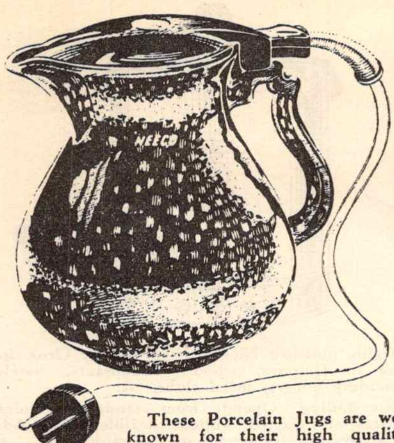
SPARES

Cat. No. AI 598—Spare 2ft. Tubes	**8/-** each
Cat. No. AL700—Spare 4ft. Tubes, white	**13/9** each
Cat. No. AL699—Spare 4ft. Tubes, Daylight	**11/8** each
Cat. No. AL720—Spare Starters	**5/-** each

FREIGHT

We pay Freight on all retail orders over £1 value. Please include sufficient cash for postage on small orders.

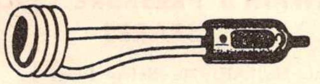
NEECO PORCELAIN JUGS



These Porcelain Jugs are well known for their high quality. Made of strong porcelain and attractively glazed. Hold 3 pints. Supplied complete with Plug and Cord. Note new reduced price.
Cat. No. AE160 .. .. **29/6** each

Boils 1 pint in about 2½ minutes

"SPEEDEE" IMMERSION HEATERS



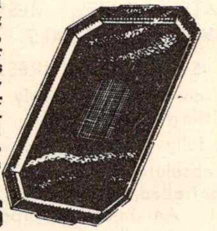
A real boon to the housewife. Fast, safe, dependable and economical. Can be used in any class of vessel containing water — either glass, porcelain, aluminium or other metals. Length, 10in. Rating 1000 watts.
Cat. No. AE150 .. .. **12/6** ea.

Complete with 3ft. Flex.

Large Type

Special type giving heavy wattage rating 2000 watts. Length 20in. Boils 4½ gallons water (summer temp.), in 1 hour, winter approx. 4 gallons.
Cat. No. AE152 .. .. **37/-** ea.

TOASTER TRAYS



Made of Moulded plastic in following colours: Red, Cream, Black, Green. For standing under toasters to catch crumbs, etc.—as well as many other home uses. Size (overall) 10¾in. x 7in. 2 holes for fitting to Speedee Hostess Toasters.
Cat. No. AE303 **6/6**

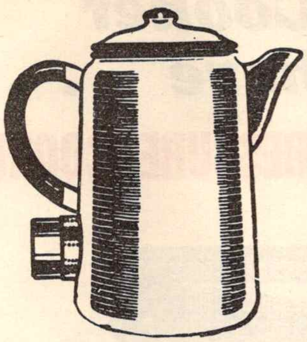
Special Trays (drilled) for "Speedee" Tiffen Toasters.—Cat. No. AE305 .. .. **7/6**

METER BARGAIN

War Surplus! Ferranti 0/500 micro-amps, 2½in. moving coil meters.
Cat. No. AM24 .. .. **25/11** each

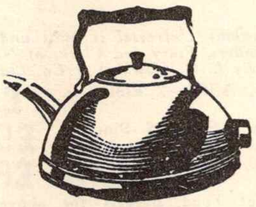
ALL PRICES IN THIS CATALOGUE ARE SUBJECT TO ALTERATION WITHOUT NOTICE.

"SPEEDEE" ENAMELLED ELECTRIC JUG



This pioneer in the unbreakable jug field is still one of the most popular jugs on the market. Fast-boiling—economical—unbreakable, this "Speedee" Jug is great value for a household boiling utensil. Each jug is complete with six feet Asbestos Flex and Appliance Plug. Current consumption 1,500 watts. Available in either Brown or Green enamel. Guaranteed 12 months. Capacity 3 pints.
Cat. No. AE167 .. .. .. **39/6**

"SPEEDEE" ELECTRIC KETTLE

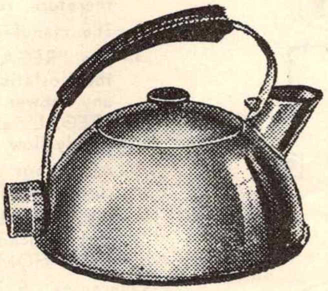


Fast boiling. Built of extra heavy guage copper and finished in gleaming everlasting chromium plate. It is the aristocrat of kettles. The "Speedee" Kettle will save you money and steps. Used right on the afternoon tea table, it is at home in a setting of dainty china and beautiful linen—at once the admiration and envy of your friends. Keeping the water hot as it does for some time after switching off it obviates the need for the hostess to rise and prepare that "second cup."

Cat. No. AE192—5-pint, 1500 watt **85/-**

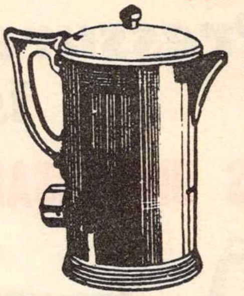
Cat. No. AE191—3-pint **65/-**

'ULTIMATE" ELECTRIC KETTLES



These highly plated Electric Kettles are fast-boiling, and are made in accordance with "Ultimate" usual high manufacturing standards. Chromium plated with black plastic handle and knob. Capacity 3 pints. A robust and pleasing design. Supplied complete with flexible cord and plug.
Cat. No. AE190 .. .. .. **75/-**

"SPEEDEE" CHROMIUM-PLATED JUG



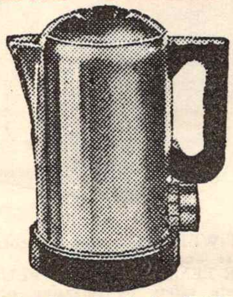
Beauty is much more than skin deep with the SPEEDEE "PREMIER" all chrome electric jug. An attractively designed jug that will be the envy of all your friends. The trimmings, such as handle, base, and knob, etc., are moulded in coloured plastics while the body is finished in glittering chromium.

Capacity 3 pints. Guaranteed 12 months. Boils in approximately 3 minutes. Supplied complete with 5ft. flexible cord and plug.

NEW LOW PRICE!

Cat. No. AE170 .. .. .. **59/6**

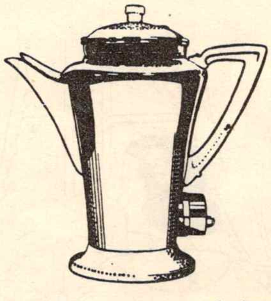
"ULTIMATE" CHROME JUG



A highly plated, attractively finished electric jug. Spun from heavy gauge copper and fitted with a solid plastic handle, base and knob. Holds 3 pints. Supplied complete with 4½ft. flexible cord. Quick boiling element. 12 months guarantee.
Cat. No. AE173 .. .. .. **78/-**

ELECTRIC URNS
SEE PAGE 14

"DEBUTANTE" CHROME JUG



A modern aristocratic design of chromium jug that combines both beauty and utility. You will quickly become enamoured with its graceful design and swift efficient service. Boils 3 pints in 3 minutes. Handle, knob and base are moulded from coloured plastics. Guaranteed 12 months and supplied complete with flexible cord and plug.
Cat. No. AE171 .. .. .. **75/-**

IMPORTANT!

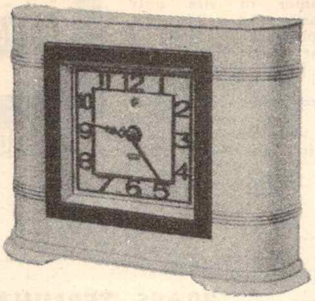
Owing to existing conditions prices in this book are given as a guide only. All orders will be executed at the rate ruling at the date of supply.

"SMITH" ELECTRIC CLOCKS

MANUFACTURED BY ENGLAND'S LEADING CLOCK DESIGNERS.

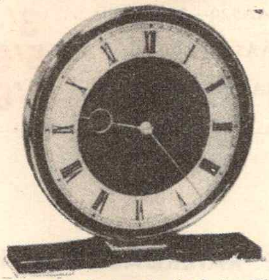
The illustrations below show four of the many Electric Clocks produced by Smith's, England. The designs are very attractive and the workmanship the best.

THE "SOVEREIGN"



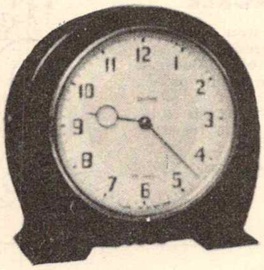
Beautifully designed in an ivory plastic case. Height 6in.; width, 7¾in.; depth 2¾in. Gilt Bezel—Striking figures. Ideal as mantel clock for Dining Room.
Cat. No. AE891 .. .. **£3/6/-**

THE "EXMOOR"



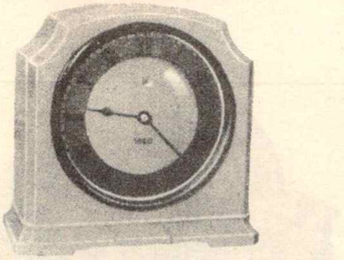
An attractively designed clock in Chrome and Plastic that would be an added beauty to any room. 6in. diameter circular dial is easily read with bold black numerals on a silvered background. Height 6¾in. Plastic Base 7in. x 1⅝in. The plastic is toned in walnut and the trimmings are chromium. A clock we can recommend for your lounge, dining room, sitting room, etc.
Cat. No. AE882 .. .. **84/11**

THE "RADLEY"



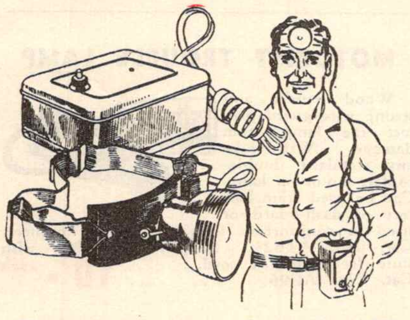
Another small mantel model for any room in the house. A neat and attractive shape. Height, 5in. Width, 5in.; Depth, 2¼in.
Cat. No. AE892 .. .. **58/-**

THE "RAMSAY"



A small clock for the bedroom, Dining room, office, etc. Walnut Plastic Case. Height 5½in.; width, 5⅝in.; depth, 2¾in. Two tone dial face with gilt trimmings.
Cat. No. AE883 .. .. **64/7**

HEAD-BAND TORCHES



These torches are extremely useful, as light can be attached to forehead thus leaving both hands free for the work on hand and at the same time assuring that the light is directed to the point where the operator is looking.

Battery box contains standard 4½-volt radio C battery and press on/off switch. A very reliable and useful light.
Cat. No. AX1478 .. **17/11** complete

WHITE PLASTIC RADIO KNOBS

Moulded Ivory Plastic Knobs Knurled edge for easy grip, ¾in. diameter. Fits ¼in. shaft.
Cat. No. AD75 .. **9D.** each

SPEEDEE COFFEE PERCULATOR

The gleaming plated finish of this new Perculator makes it an ideal gift for any occasion and will add tone to any table, and of course it makes wonderful coffee.
Cat. No. AE185 .. **£5/19/6**

DELCO 8-INCH DESK FANS

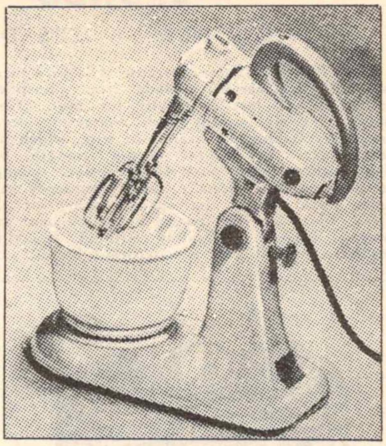
Delco 8in. Desk Fans are modern, streamline fans, attractive to both the home and office, silent, balanced and exceedingly useful. These fans are the best on the market.

Incorporating the shaded pole motor, these fans give trouble-free operation controlled from a simple on/off and 2-speed switch mounted in the base to regulate the airflow.

All fans are supplied with a protective guard and approximately five feet of plastic cable.

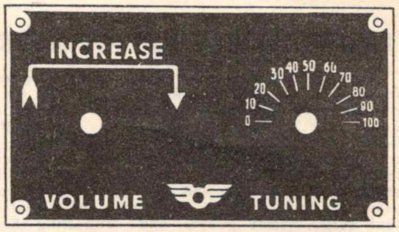
The mounting consists of a sturdy pedestal of aluminium construction, with rubber pads on the base to prevent scratching or marking of polished surfaces.
Cat. No. AE118 .. .. **£3/16/6**

GREMLIN FOOD MIXER



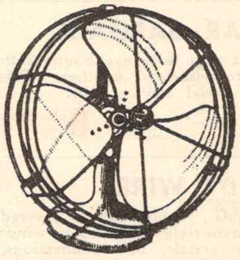
Incorporating the following features:—
Beautifully finished in cream stove enamel.
Handles in green or red relief.
Equipped with highly efficient field control motor.
Complete with two plastic bowls—6in. and 9in.
Detachable head and paddles.
Special flat type stainless steel beaters with aerated groove.
Adapted for fruit juice extractor.
Three-speed control.
Spare parts and bowls always available.
Fully guaranteed for twelve months.
Cat. No. AE222 .. .. **£19/19/-**

RADIO DIAL PLATE



Dial plate as used on some "Easy-Built" kits. Size, 4in. x 2¼in. Finish black and silver.
Cat. No. AD35 .. .. .. **6/6** each

COOL!



Yes, you can always keep cool with a 12-inch "Frost" British made electric fan. Sturdy motion, built for long life. Supplied complete with cord.
Cat. No. AE122— **90/-** each

GREAT BARGAIN OFFER!

24 ASSORTED RESISTORS

Another great 1950 bargain. An assortment of two dozen ½ watt resistors valued at three times the price. Offered in a parcel lot for only 5/-. Values include: 200, 600, 2000, 10,000, and 150,000 ohms.
Should we run out of any of the above we will substitute with an equally popular size.

WHAT GREATER OFFER?

Cat. No. AR308 .. **5/-** LOT

The "Vibro-Tool" De Luxe

GIVES YOU POWER TO DO FAST WORK OF FINE QUALITY!

Writes on . . .
Watches, Glassware, Tools, Leather, Plastics, Jewellery, Pots and Pans, Sporting Equipment, etc., etc.

Engrave your name . . . etch letters or designs . . . place permanent identification marks on anything with this unique hand tool. Carves Wood and linoleum, cuts cardboard and balsa, tools leather. Just plug in on any 230 volt A.C. line. No Workshop is complete without a Burgess Vibro-Tool.

For the first time, the simple principle of vibration is applied in a hand-tool that secures results never before accomplished so easily. Amazingly versatile, the BURGESS VIBRO-TOOL enables many difficult industrial jobs, as well as the simplest home workshop tasks, to be carried out with speed and efficiency. For embossing thin gauge metals, frosting glass, designing on plastic, you can't beat the "VIBRO-TOOL" DE-LUXE.

The De-Luxe Kit is supplied complete with 19 attachments in a highly polished wooden case
Cat. No. AU360 .. ONLY **£5/9/-**

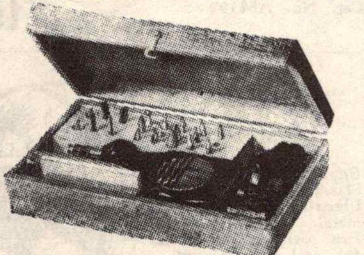
STANDARD VIBRO-TOOL

The Standard model is similar to above but is supplied with a general purpose engraving point only.
Cat. No. AU361 .. ONLY **51/9**

Both Units Supplied Complete with Illustrated Booklet.

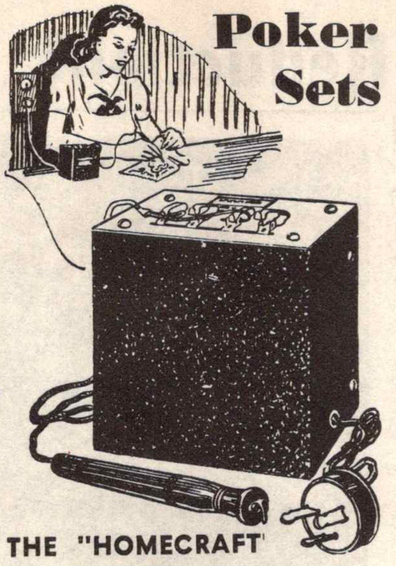
SPARE ACCESSORIES SAME AS USED WITH DE-LUXE "VIBRO-TOOL"

Cat. No. AU362—Standard point (V5) for most types of engraving .. .. 8d. ea.
Cat. No. AU363—Hard Point (V3) for hardened metals, glass, etc. .. .. 6/3 ea.
Cat. No. AU364—Knives—Straight for gasket and stencil cutting .. .. 1/9 ea.
Cat. No. AU365—Knives—Curved (V24) for general purpose cutting .. .. 1/9 ea.



Cat. No. AU366—Ball Points (V44/48) assorted sizes for embossing metals, hammering, working leather, etc.
SET OF 5 .. .. .. 2/10
Cat. No. AU367—Carving Chisels (V51/56) for wood carving, lino-block cutting, etc.
SET OF 4 .. .. .. 6/10
Cat. No. AU368—Diamond Point (V80) Not supplied with De-Luxe Kit. This is actual diamond insetting for continuous glass work, fine engraving on jewellery, etc. .. 28/9
Cat. No. AU369—Abrasive Point (V81) for frosting glass, smoothing other surfaces 5/3
Cat. No. AU370—Leather Tools (V82/87) for all types leather work, includes slotter, punch, liner, deerfoot, spoon, combination double liner and cutter.
Set of 6 .. .. 5/9 set
Cat. No. AU371—Foot Gauge (V101) for use with knives to regulate depth of cut. 4/9
Cat. No. AU372—Knife Adaptor (V25) 8d. ea.

Poker Sets



THE "HOMECRAFT" POKER WORK SET

For use from standard 230-volt light socket or power point. Tip gets very hot and by changing leads on to different terminals heat can be varied for different classes of work. Metal box measures 3¾in. x 3in. x 4½in.

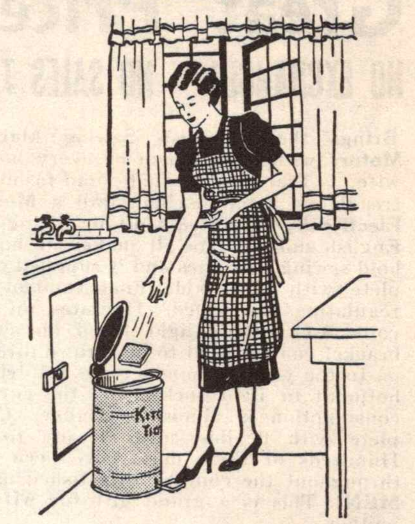
The introduction of the Homecraft Poker Machine will undoubtedly advance this art in New Zealand. By using this machine the artist can concentrate all his or her attention on the pokerwork itself, as, when the heat is regulated to the required strength it automatically remains at the same heat. This enables the work to be executed at great speed. Homecraft Machines are perfectly safe in use.

Cat. No. AE90 .. .. **59/6**

Cat. No. AE91—Spare Tips for above .. .. **4D. each**

Cat. No. AE92—Spare Handles (complete with flex) .. **12/- each**

"KITCHEN TIDY"



The modern version of a small hygienic rubbish bin. Outside metal container sprayed either Cream or Green. A handy sized galvanised bin (8¼in. x 9¾in.) complete with handle, slips inside this container and can be removed and emptied at frequent intervals. Just press the metal lever as illustrated and the lid swings open. So attractive, clean and convenient. Height 13½in., diameter 9½in.
Cat. No. AU391 .. .. **25/9**

LAMPHOUSE GUARANTEE

Any goods that prove in any way unsuitable may be returned undamaged within seven days from receipt and your money will be refunded in full.

THE "ENSIGN" BATTERY WELDER

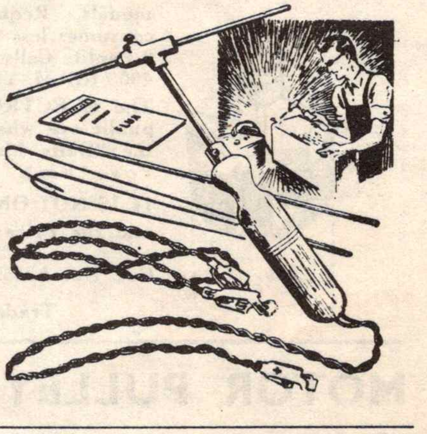
SAVE TIME! — LABOUR! — MONEY!

Works from any 6 to 12 volt storage battery providing instant and even heat. Do your own soldering, welding, brazing, with this useful tool.

The welder is of rugged construction. Battery leads are of heavy rubber-covered low-potential cable, giving maximum transfer of power to the welder.

The Welder is especially applicable for auto repairs, mudguards, radiators, etc., and also light inside work—for the farm it is invaluable for mending buckets, cans, and light farm implements. Battery firms use it for lead burning; especially useful for battery repairs on the roadside. Supplied with full instructions.

Cat. No. AE8 .. .. **39/6** complete



Spares:

Cat. No. AE9—Carbon Electrodes .. 2/6
Cat. No. AE10—Brass Electrodes .. 6d.
Cat. No. AE11—Steel Electrodes .. 6d.
Cat. No. AE12—Packets of Flux .. 6d.

PLEASE INDICATE ON ALL ORDERS WHETHER WE MAY SUBSTITUTE IN THE EVENT OF THE LINE ORDERED BEING OUT OF STOCK OR UNPROCURABLE.

AIDS FOR THE HANDYMAN!

NU-MOULD PLASTIC WOOD

PLASTIC WOOD

The perfect moulding material. A plastic material which is easily worked. A high-class filler for all types of jobs. Used by Carpenters, Joiners, Painters, Mechanics, Farmers and Householders. Hardens very rapidly, and, like wood, can be cut, sawn, planed, filed, nailed or screwed. It can be varnished, stained, painted or polished. Grease-proof, waterproof, and weather-proof.

Cat. No. AU168—1oz. Tube **1/7**

LIQUID CASEIN GLUE—"ATAGLU"

Waterproof. A high-class, ready to use, casein liquid glue. "Ataglu" eliminates loss of time preparing hot glues. Does not stain. Gives a better spread than ordinary cold glues.

Cat. No. AU157 .. .. Tin **1/10½**

"3-IN-1" OIL

3
3 IN ONE OIL

Motors, Lawnmowers, Vacuum Cleaners, etc., are all very hard to replace. Keep them in A1 order with "3-in-1."

"3-in-1" also works miracles in brightening dull furniture and woodwork. A few drops on any soft cloth wrung out in water gives you a dusting and polishing cloth that not only polishes but also cleans and protects the finest finish.

Cat. No. AU151—3oz. Can .. **1/10½**

SCREWDRIVERS

Plastic Handles with space for screws etc. British made.

	Each
Cat. No. AU333 4½in. blade (light) ..	1/3
Cat. No. AU332 4½in. blade (heavy) ..	2/-
Cat. No. AU331 6in. blade (light) ..	1/6
Cat. No. AU330 6in. blade (heavy) ..	2/3

(Light blades are most suitable for radio work).

"QUICKMEND"

IS THE NEW SCIENTIFIC LIQUID MENDER

ICKME
LY PREPARED FO
IUM, ENAMEL, TIN
, CAR RADIATORS
NS.—Apply with s
e and let stand s
before using. Keep
CIRCULAR CARE
Manufactured by
Y LTD., - - SYDNE

Specially prepared for mending Aluminium, Brass, Silver, Copper, White Metal, Iron, Pewter, Guttering, Enamel, Petrol Tanks, Carburettors, Water Tanks. Requires no HEAT, no SOLDERING IRON, no FLUX. Is not soluble in Spirits or Acids; withstands the action of hot or cold water.

Full instructions with each bottle.

Cat. No. AU167 .. Costs Only **1/7** Bottle

Amberlite Screwdrivers

Pocket sizes in Amberlite Screwdrivers all with pocket clips.

Cat. No.	
AU316—1in. stem	ALL **1/4** each
AU317—2in. stem	
AU318—3in. stem	

HACK-SAW BLADES

BEST QUALITY.

Cat. No. AU300 .. .. .. **6D.** each

"NEW GRIP" MENDS ANYTHING!

"NEW GRIP"—The Universal Cellulose Cement, mends anything: Slate, Glass, Paper, Ivory, Wood, Crockery, Canvas, etc. Recommended for Model Aeroplane building.

NEW PRICE!

Cat. No. AU156 .. **1/5**

"COILVARN"

QUICK DRYING INSULATING VARNISH

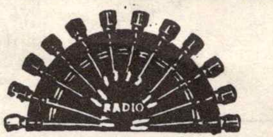
COILVARN
Quick-Drying Insulating Varnish (Coil Dope).

Coilvarn is a fast-drying moisture-proof Coil Dope. Painted over Coil Windings it will hold them rigidly in place and prevent the atmosphere getting at the windings. Excellent for coating Coil Formers before they are wound, and for impregnating wood panels so as to ensure they do not absorb moisture. Coilvarn can also be used for mending Speaker Cones, and a hundred and one other Radio jobs, requiring a first-class insulating varnish or cement.

Every experimenter or serviceman should keep a jar of COILVARN on hand.

Cat. No. AU200 .. .. .. **1/6** Jar

RADIO SCREWDRIVERS



Insulated Handle Screwdrivers. Best steel, fine points, moulded handle that remains fast. 5000 volt test.—Cat. No. AU314 .. **10D.** each

"C.M." WATER PUTTY

C. M.
CABINET MAKERS
WATER PUTTY

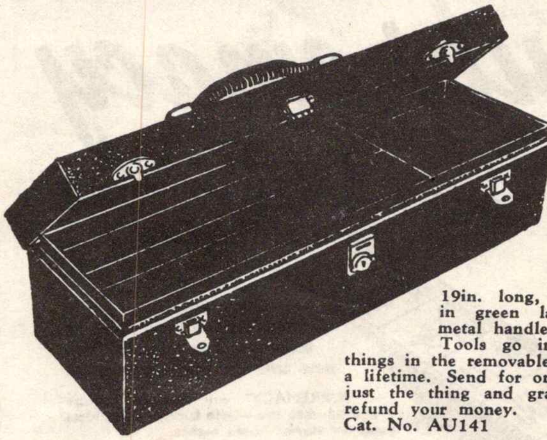
Ready for use, simply by mixing with water. Dries rock hard without shrinking. Easy to apply, and can be used on wood, plaster stone, and similar material. Can be coloured or varnished.

Cat. No. AU163 (8 oz.) .. .. **1/6** per tin

Cat. No. AU165—Large size (16 oz.) .. .. .. **2/4** per tin

SAVE TIME AND TEMPER! Get one of these

ALL-STEEL Handy Tool Boxes



19in. long, 6in. wide, 6¾in. deep. Finished in green lacquer, solidly constructed, stout metal handle, and with a place for everything. Tools go in the bottom, and all the small things in the removable tray. It's a dandy job—good for a lifetime. Send for one today, and if you don't think it just the thing and grand value—return it, and we will refund your money.

Cat. No. AU141 .. .. **40/-**

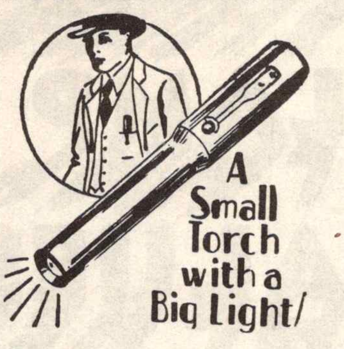
Try any line in this Catalogue at OUR RISK!

Any goods that prove in any way unsuitable may be returned undamaged within seven days from receipt and your money will be refunded in full.

PROSPECTIVE BUYER — ALL GOODS LISTED IN THIS CATALOGUE ARE COVERED BY OUR 7 DAY MONEY-BACK GUARANTEE

TORCHES – BATTERIES – LAMPS

"PIFCO" PLASTIC PENLITE

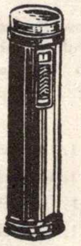

A Small Torch with a Big Light!

An English made Plastic Pen Torch that will clip into a man's coat pocket or slip into a lady's handbag. Small. CONVENIENT!

Supplied complete with Globe and (915) Eveready Batteries. Cases in Assorted Colours.

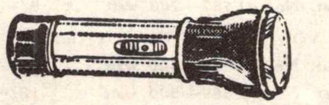
Cat. No. AT813A—
NEW LOW PRICE! .. **6/11** complete

PERLUX "CHIC" TORCHES



Here's a super little Torch for a Ladies' Handbag or a Gent's pocket. Designed in attractively coloured plastic and using the "Eveready" 712 Battery the "Chic" measures only $4\frac{1}{2}$in. x 1in. Excellent value at the price. Complete with battery and globe.
Cat. No. AT817— **3/10** each

PERLUX "PHOSPHO-GLO" TORCHES

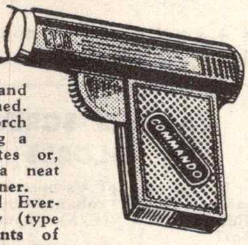


Just the latest thing in torches. The plastic body is moulded with a luminescent material which causes it to glow in the dark. It's not only a novelty but a very practical idea. Length of torch 7in. Fitted with pre-focus bulb. Uses two standard size torch cells. Supplied complete with globe and battery.
Cat. No. AT814 .. .. **12/6**

"PERLUX" UNBREAKABLE TORCHES

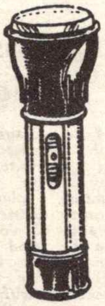
Similar size, etc., to the above but moulded in a heavy yet flexible plastic for rough usage such as garages, factories, tramping, etc. NOT LUMINOUS. Supplied complete with batteries and globe.
Cat. No. AT818 .. .. **12/6**

" COMMANDO " TORCHES



Something new in the way of a Torch. Novelty and usefulness combined. The base of the Torch slides back, leaving a space for Cigarettes or, for the Ladies, a neat Powder-puff Container. Uses the Standard Eveready Bijou Battery (type 712). Measurements of Torch, Length $4\frac{1}{2}$in., Depth 4in. Available in several different colours, complete with Bulb and Battery.
Cat. No. AT816 .. .. .. **7/6**

"PERLUX" PLASTIC TORCH

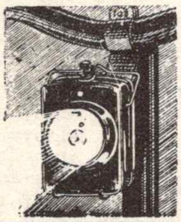


A really streamlined Plastic Torch at a really good price; moulded from Plastic, and in several different colour tonings. Fitted with the American Fixed Pre-focus Bulb. Firm, quick-acting Switch. Length of Torch, 7in. Uses two standard size Torch Cells (Eveready 950).

Complete with Batteries and Globe.

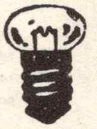
Cat. No. AT815— **9/6** each

QUALITY CYCLE LAMPS



Metal-cased English Cycle Lamp. A well-constructed job, with a $2\frac{1}{4}$in. diameter highly polished, nickel-plated reflector; case coloured black. Fixing bracket and carrying handle provided. Complete with Battery and globe.
Cat. No. AT804— **8/11**

TORCH LAMPS



Standard Types. Best Quality.

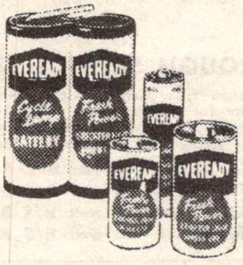
Cat. No. AL112—2.5 volts ..	7d. each
Cat. No. AL113—Focus 3.5 volts	9d. each
Cat. No. AL109—Focus 6 volts ..	1/- each
Cat. No. AL99—2.5 volts, pre-Focus type (American Fixed Focus)	1/9 each
Cat. No. AL1—6 volt 3 watt Cycle Dynamo Lamps	1/7 each
Cat. No. AL2—6 volt 1.8 watt Cycle Dynamo Lamps ..	1/7 each

EVEREADY
TRADE-MARK

EVEREADY TORCH BATTERIES

Always keep spares on hand.

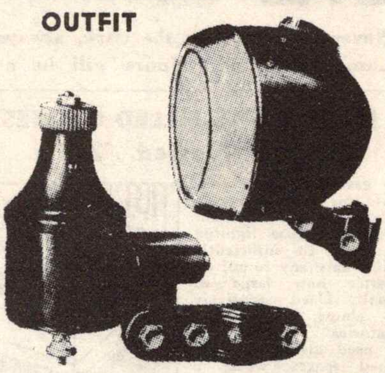
Cat. No. AB200 — Standard Unit Cells (950)	**9**D. each
Cat. No. AB201—Baby Unit Cells (935)	**8½**D. each
Cat. No. AB203—Bijou Midget Two Cell (712)	**11**D. each
Cat. No. AB204—Flat Pocket Torch Battery (703)	**2/-** each
Cat. No. AB205—Cycle Lamp Battery (701)	**1/11** each
Cat. No. AB202—Penlite Unit Cells (915)	**9**D. each

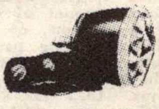


Cat. No. AB270—U14 Gas lighter cells to fit "Eveready" Gaslighters **5/8**

Cat. No. AB223—Type 409 6-volt Battery. Height $3\frac{7}{8}$in., width $2\frac{3}{4}$in., depth $2\frac{3}{4}$in. Constructed for Hand Lanterns, etc. **6/6**

THE "STARLITE" DYNAMO OUTFIT





A well-designed, black sprayed 6-volt Dynamo Set. 3in. diameter, highly polished Reflector to give maximum efficiency. Incorporates space and switching arrangement to convert headlamp for stationery battery operation. Complete with Ruby Tail Lamp, connecting leads, globe and fixing brackets. A first rate English product.
Cat. No. AT807 **42/6** set

BIG OFFER!

4.5 VOLT TORCH GLOBES.

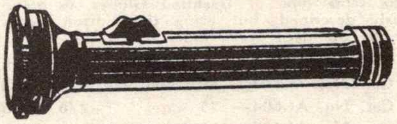
We have purchased a large quantity of AMERICAN MADE "MATCHLESS" 4.5 volt .3 amp. Standard M.E.S. Base Torch Globes.

These globes are slightly rusted on the base (which in no way affects their operation) and we managed to get them at a greatly reduced price.

NOW YOU TAKE ADVANTAGE OF IT!

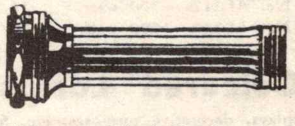
Cat. No. AL103—Normally 11d. each.
NOW **6**D. each
OR 3/- BOX OF 10.

3 CELL LONG RANGE TORCHES



Very popular with hunters and fishermen and general outdoor use, where powerful light is needed. Will focus broad spreadlights or long penetrating beams. 3-Cell Focus Torch, 800ft. range. Complete with globe and batteries.
Cat. No. AT840 .. .. **14/6**

2 CELL FOCUSSING TORCHES



A good heavy standard 2 cell torch finished in bright nickel plate, with carrying clip and decisive action switch. Special focussing clip in head. Highly plated reflector.
Cat. No. AT835 .. .. **8/-** complete

ALL PRICES IN THIS CATALOGUE
ARE SUBJECT TO ALTERATION
WITHOUT NOTICE.

A Woman's Crowning Glory!

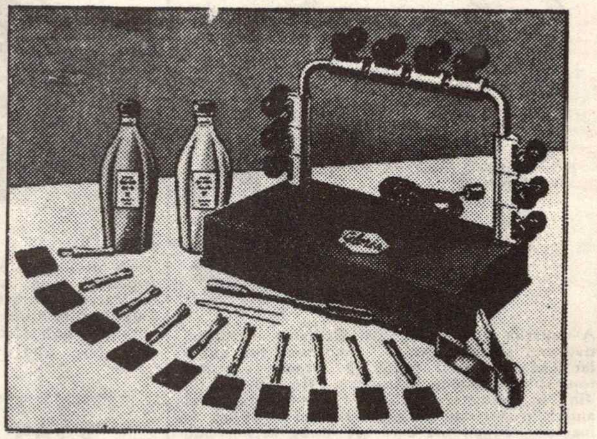
PERM. YOUR HAIR YOURSELF—AT HOME!

Yes! Now you can cut out those tedious time-wasting hairdressing appointments!

All you need is—

The "GLORIA"

Home Permanent Wave Outfit



Our Guarantee Protects You! ***SEND FOR ONE NOW!***

SPARES ALWAYS AVAILABLE.

With the "GLORIA" Outfit you will be able to PERM YOUR OWN HAIR IN YOUR OWN HOME, easily obtaining a PERM OF PROFESSIONAL QUALITY—waves and curls of lasting loveliness, with self-setting ends. The "Gloria" is ready for service any time of the day or night. The parts of the "Gloria" Outfit are extremely easy to use, and by following the instructions you will immediately be able to "perm" your own hair and also that of other members of the family, if desired!

ASSURES A PERM OF PROFESSIONAL QUALITY. We illustrate the complete outfit above. It is, in principle, the same as used in any modern Beauty Salon. No experience or training is necessary with the "GLORIA" Permanent Wave Outfit. Those who live in the country will find this outfit will soon pay for itself by the saving of time and expense of going to town for perms.

Complete Outfit
Cat. No. AE105 **£6/12/6 only.**

Includes 130-watt, 230-volt Permanent Waving Machine; 10 Heater Clamps; 10 Spring Winding Rods; 10 Rubber Pads; 1 bottle Waving Solution; 1 bottle Setting Lotion; 1 Damper; 1 Winder; 1 Instruction Book. Extra Parts and Refills of Waving and Setting Solutions can be bought separately.

GLORIA WAVER SPARES

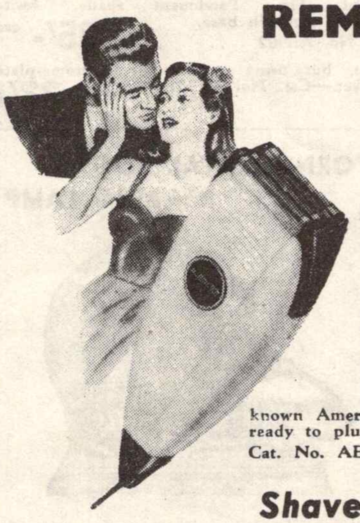
	Each.
Cat. No. AE106—Heating Clamps	5/9
Cat. No. AE107—Curling Rods	2/10
Cat. No. AE108—2½oz. bottle of Waving Solution ..	3/9
Cat. No. AE109—10oz. bottle of Waving Solution ..	10/9
Cat. No. AE110—2½oz. bottle of Setting Lotion	2/10
Cat. No. AE111—10oz. Bottle of Setting Lotion	9/3
Cat. No. AE112—Spare Dampers	4/6
Cat. No. AE113—Spare Winders	4/-
Cat. No. AE114—Rubber Pads	5/- doz.

ENGLISH PLASTIC CASE HAIR DRIERS

These Hair Driers are moulded in finished plastic. They are British made, the fan being driven by a solidly constructed and trouble-free motor. A heating element is incorporated and a switch provided so that hot or cold air can be obtained at will. As a quick and efficient means of drying the hair, these electrical driers are ideal. Complete with 5ft. flexible cord.

Cat. No. AE215 .. .. **£4/16/-**

REMINGTON SHAVERS



HOW TO BE LAZY

15 MINUTES LONGER EACH MORNING.

Let the "Remington Foursome" Four Head Electric Shaver cut your Shaving Time to Seconds !

Gives a smooth, clean shave without the use of soap and water. Fitted with the famous "BLUE STREAK" 2 in 1 CUTTING HEAD!

The complete unit is enclosed in a beautiful Ivory Plastic Case and is fitted with a snaptite, lucite headguard to protect the heads when not in use. Manufactured by a subsidiary company in England for the well-known American firm. Supplied complete with 6ft. rubber flex all ready to plug-in to your light socket or hotpoint. 230 v. AC/DC.

Cat. No. AE490— NEW LOW PRICE! **£8/8/-**

Shave the MODERN WAY

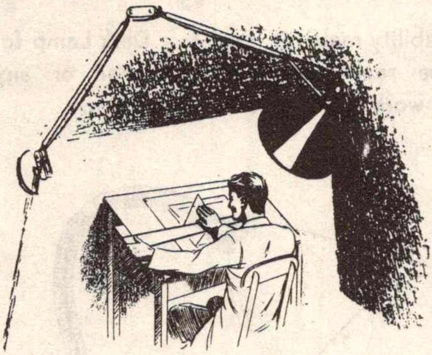
SPARE SHAVER HEADS

Cat. No. AE579—Remington Blue Streak Twin Cutters	**31/-**
Cat. No. AE580—Remington Oval 5U Head	**21/5**
Cat. No. AE581—Schick Heads	**40/-**

IMPORTANT !

Owing to existing conditions prices in this book are given as a guide only. All orders will be executed at the rate ruling at the date of supply.

MOVABLE ARM LAMP

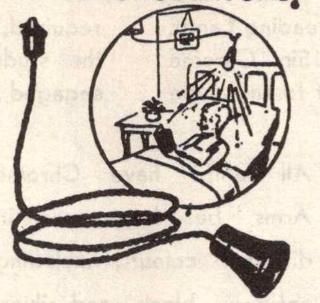


A Bracket Lamp, ball jointed at base, centre and head to allow the light to be directed at any angle. May be swivelled up, down, sideways—just wherever you want it. Bracket is manufactured in heavy chromium rod ⅜in diam. and will project over any length up to 30in. Circular flange at base for screwing bracket to wall. Can be supplied with or without flex and lampholder, etc., as priced below.

Cat. No. AF891—Bracket only without fittings	**33/6**
Cat. No. AF892—Bracket complete with 10ft. flexible cord, lampholder with switch and light adaptor ..	**43/-**

Lighting EXTENSION CORDS

Read in Comfort!



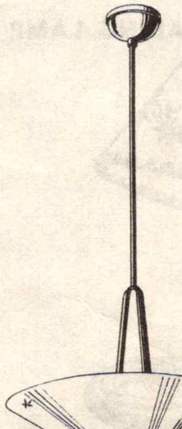
For taking the light where you want it. Ten feet long and supplied with an insulated shockproof lampholder. Extra long lengths can be made up at 9d. yard extra.

Cat. No. AE51	**5/-**
Cat. No. AE52 (with switch holder)	**8/9**

LAMPHOUSE GUARANTEE

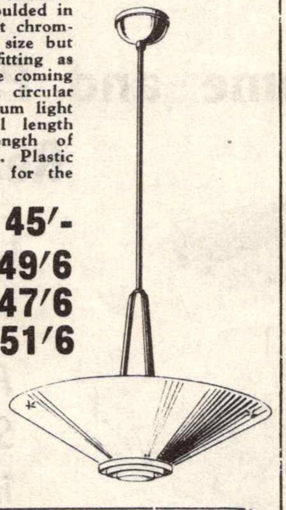
Any goods that prove in any way unsuitable may be returned undamaged within seven days from receipt and your money will be refunded in full.

PLASTIC PENDANT FITTINGS



Two styles of attractive Ivory Plastic Lighting Pendants. The shades proper and the ceiling cup are moulded in ivory plastic and the centre columns are bright chromium plated tubes. Both fittings are the same size but have slightly different bases. The "Cone" fitting as the name implies is shaped as a cone the base coming to a point, while the "Louvre" fitting has a circular slotted base as illustrated to allow for maximum light distribution. *Dimensions of fittings:* Overall length 30in. from ceiling mounting to base. Length of chromium tube 14in. Width of Bowl 14in. Plastic ceiling mount 6in. diam. The slotted inset for the "Louvre" fitting measures 4¾in. diameter.

Cat. No. AF708—"CONE" FITTING (This price does not include wiring.)	**45/-**
Ditto, wired ready to plug in. Cat. No. AF708A	**49/6**
Cat. No. AF709—"LOUVRE" FITTING (This price does not include wiring.)	**47/6**
Ditto, wired ready to plug in. Cat. No. AF709A	**51/6**



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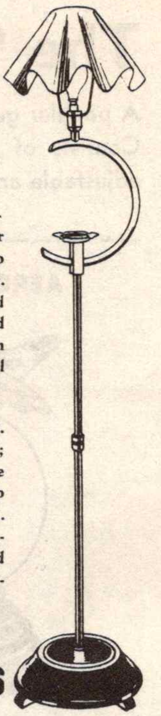
A SUGGESTION

As it is much easier for us to make a refund along with your receipt than for you to get stamps or postal notes to remit a small balance that may be left owing when your receipt is sent, would it not save you inconvenience if you were always to send ample cash to allow for freight, etc.? We will refund the difference, or place it to your credit, according to your instructions. Do as hundreds of our customers do, send a blank cheque, which we will fill in when we have totalled your order. You can write across the top of the cheque "Not to exceed £5"—or £10, or £20, as the case may be.

ASH-TRAY CHROME STANDARD LAMP

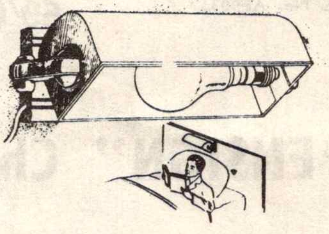


A distinctively designed Standard Lamp 3ft. in height for use as a Reading Lamp beside armchairs, settees, etc. Designed to meet the demand for a bantam size Standard these Lamps would make an attractive addition to any well furnished room.

Chrome tubing measures 3ft. from floor to lampholder; black coloured wooden base is 8½in. diameter. The Lamp is supplied complete with 6ft. flexible cord, switch on lampholder, globe and waved shade. (State colour preference when ordering.)

Cat. No. AF715— COMPLETE	**£4/12/6**

"BARONESS" PLASTIC LAMPS



Moulded in Plastic the "Baroness" is a new dual-purpose Reading Lamp to meet every need. Two rubber covered clips (covered so as not to mark your furniture) enable the "Baroness" to clip on the bed-head while special grooves in back plate of the lamp allow also for wall mounting. Standing the "Baroness" on a table gives an excellent bedside or desk-lamp.

ATTRACTIVE—YET VERSATILE!

The shade is swivel mounted to allow you to concentrate the light just where you want it. Lamp measures: Length, 9½in.; Width, 3¾in.; Height, 6in. ON-OFF Switch mounted in base. Supplied complete with 9ft. flexible cord. *Moulded in three Colours:* Pink, Green, White.

Cat. No. AF912	**38/6**
(Without Globe.)	
40-watt Globe	**1/10** extra

CHROME PENDANT RODS

Chromium plated Rods for supporting glass fittings. Supplied in several different lengths as given below. Each Rod is fitted with a lampholder, attachment for mounting to the ceiling and a chromium metal cup to slide up the rod, covering the ceiling mount and giving a finished appearance. Rods ½in. diameter.

Cat. No. AF500—18in. Rod	17/4
Cat. No. AF501—24in. Rod	18/10
Cat. No. AF502—30in. Rod	20/4
Cat. No. AF503—36in. Rod	21/10

A LAMPSHADE FROM THE LAMPHOUSE CAN IMPROVE THE BEST OF ROOMS

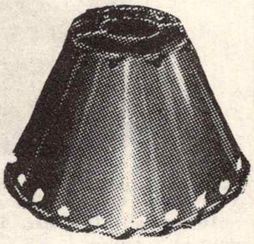
Parchment & Plastic Lamp Shades

COLOURS

All shades on this page can be supplied in the following colours. Red, Pink, Orange, Lemon, Pale Green, Pale Blue, as well as plain White. Please state colour when ordering.

SMALL EMPIRE

Small shades for bracket lights or hanging lights in small rooms. Diameter 5¾in.; Height 4½in.



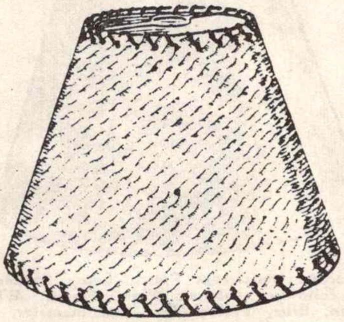
Cat. No. 7/P/R—Parchment	**2′9** each
Cat. No. 7/P/Z—Plastic	**4′6** each

Shades similar to above but supplied with clip for clipping directly on to upright lamp bulbs.

Cat. No. 7A/P/R—Parchment	**2′9** each
Cat. No. 7A/P/Z—Plastic ..	**4′6** each

EMPIRE SHAPE 8in.

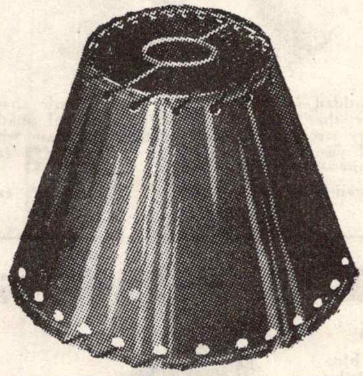
Height 8in. Diameter 8in. Laced with Rayon.



Cat. No. 3/P/R—Parchment ..	**3′6** each
Cat. No. 3/P/Z—Plastic ..	**6′-** each

EMPIRE SHAPE 10in.

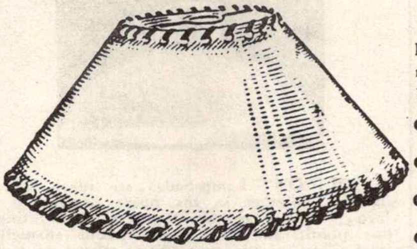
Height 7in. Diameter 10in. Laced with Rayon.



Cat. No. 1/P/R—Parchment ..	**3′9** each
Cat. No. 1/P/Z—Plastic ..	**7′11** each

CLIP FITTINGS

All shades up to 14in. diameter can be supplied with clip fitting for use with table lamps at no extra cost.



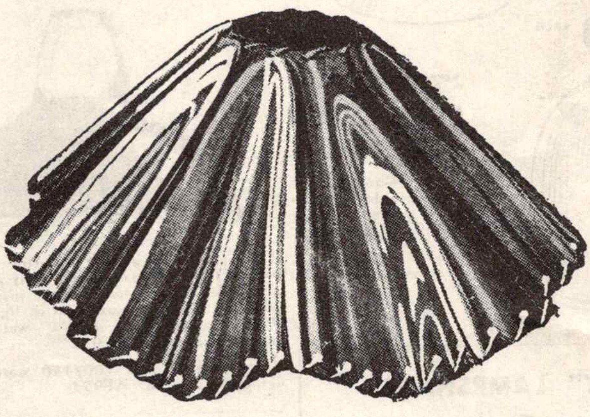
SQUAT EMPIRE

Low and wide shape which allows for maximum of light. Available in 10 and 14in. diameters as follows.

Cat. No. 15/P/R—Parchment 10in	**3′9**
Cat. No. 15/P/Z—Plastic 10in.	**7′6**
Cat. No. 6/P/R—Parchment 14in.	**6′-**
Cat. No. 6/P/Z—Plastic 14in.	**12′6**

PLASTIC WAVED SHADES

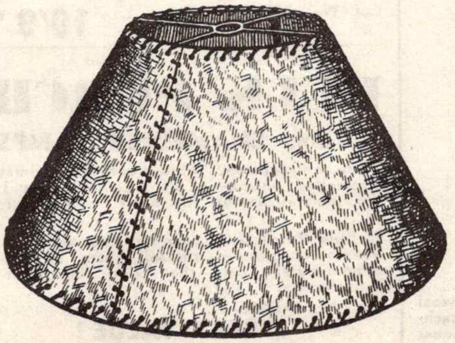
Modern Gleaming Plastic



Made in six soft pastel colours and its "chic" shape makes it universally popular for lounge, breakfast room, or Milady's Boudoir. The fine tinting on the transluscent plastic enables you to obtain the maximum, yet a soft light. Bound with rayon to match.

Cat. No. 36/P/R—12in. diameter	**13′6** each
Cat. No. 49/P/R 10½in. diameter	**12′6** each
Cat. No. 48/P/R—9in. diameter	**7′6** each

FLOOR LAMP SHADES

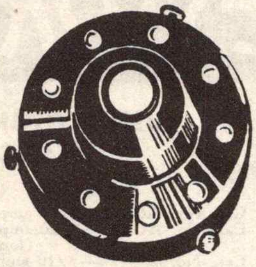


Two sizes available. Especially suitable for floor standards but can also be used as hanging shades in large rooms, halls, etc. Rayon braid.

Cat. No. 32/P/R—20in. Diameter Parchment ..	**21′-** each
Cat. No. 32/P/Z—20in. Diameter Plastic ..	**29′6** each
Cat. No. 30/P/R—24in. Diameter Parchment ..	**30′6** each
Cat. No. 30/P/Z—24in. Diameter Plastic ..	**44′-** each

LAMP FITTINGS — BRACKETS

GALLERIES FOR GLASS LAMP SHADES



All the following have a standard 1⅛in. hole for fitting on to standard size lampholders.

Brown Bakelite Moulded Gallery 2¼in.—
Cat. No. AF350—
1/3 each

Cat. No. AF351—Ditto, 3¼in. ..	3/9
Cat. No. AF352—Ditto, 4¼in. ..	4/–
Cat. No. AF356—Ditto, 4¼in. white ..	4/3

METAL GALLERIES AS ABOVE
Oxidised Copper

Cat. No. AF353—2¼in.	1/3
Cat. No. AF354—3¼in.	3/6
Cat. No. AF355—4¼in.	4/9
Cat. No. AF379—Ditto, with hook ..	6/–

CHROME FINISH

Cat. No. AF357—2¼in.	1/9
Cat. No. AF358—3¼in.	4/9
Cat. No. AF359—4¼in.	5/3

CHROME CEILING GALLERIES

Cat. No. AF360—3¼in.	7/6
Cat. No. AF361—4¼in.	8/9

FITTING ACCESSORIES

DEEP 3-HOOK CEILING CANOPIES

Has three hooks for hanging bowl fittings, etc. Deep enough to fit right over the ceiling rose, thus saving the expense and trouble of removing the ceiling rose and block to fit a special connecting block. Oxidised copper finished.
Cat. No. AF310 .. .. **4/3**

SHALLOW 3-HOOK CEILING PLATES

Serves same purpose as the Deep 3-Hook Canopy described above. The mounting plate is flat, which necessitates the removal of the ceiling rose. Diameter 3in. Oxidised Copper Finish.
Cat. No. AF309 .. .. **3/10** each

Similar type of plate but with Single Hook. Nickel Finish.—Cat. No. AF313 **3/9** each

CHROME CHAIN

For Hanging Bowl Fittings, etc., 1¼in. x ¼in. Cross Links. Also ideal for Hanging Mirrors.
Cat. No. AF316 .. .. **3/3** yard

HOOKS AND BUTTONS

½in. Nickel Plated Hooks. complete with washers and nut.—Cat. No. AF323 **1/9** ea.

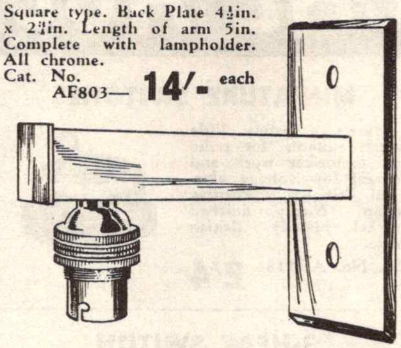
BOWL BUTTONS

Oxidised. Complete with washers and nuts.
Cat. No. AF325 .. .. **5D.** each

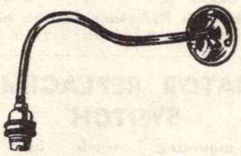
Prices for other Fitting Accessories on application.

WALL BRACKET

Square type. Back Plate 4½in. x 2¾in. Length of arm 5in. Complete with lampholder. All chrome.
Cat. No. AF803— **14/-** each



WALL BRACKETS

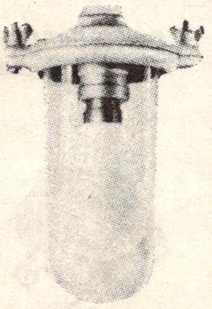


Chrome 9in. Wall Brackets, complete with Lampholder. Best quality.
Cat. No. AF801 .. .. **12/-** each

Cat. No. AF802—Ditto 6in. size complete with Lampholder. .. .. .. **11/-** each

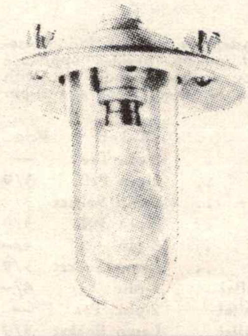
Well-Glass Watertight Fittings

For OUTSIDE LIGHTING



Cat. No. AE842—
60 watt size. Complete with holder.
14/- each

Cat. No. AE841—
150 watt size. Complete with holder.
16/- each

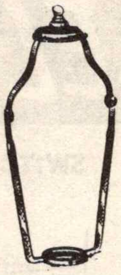


Similar to above, but with enamelled reflector.
Cat. No. AE847—
150 watt size.
Complete **17/3**

SPARE GLASSES
Cat. No. AE844—
60 watt size **5/9**

Cat. No. AE843—
150 watt size.
6/9

SHADE HOLDERS



Shade Holders for table lamps. Oxidised finish. Hinged in the centre so that the shade can be tilted.
Cat. No. AG36 **2/3** ea.

Similar to the above, but chrome plated.
Cat. No. AG37 **3/3** ea.

SHADE HOLDERS

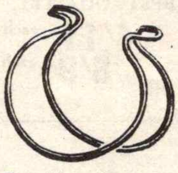
For fixing Shades to table lamps. Non adjustable type.
Cat. No. AG38 .. .. **2/3** each

IMPORTANT!

□□□

Owing to existing conditions prices in this book are given as a guide only. All orders will be executed at the rate ruling at the date of supply.

SHADE CLIPS



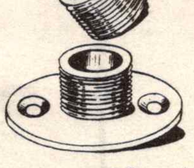
Can be attached to any Lampshade. By using this Clip an ordinary lampshade can be converted to fit a reading lamp without the usual shade carrier.

Just clips straight on to the globe.

Cat. No. AF381 .. .. .. **6D.** each

NIPPLES

Threaded Brass Tube for making table lamps, etc. Fit standard ½in. lampholders.
Cat. No. AG300—
6D. each



FLANGES

Cat. No. AG306—½in. .. .. **9D.** each

FLANGES

Metal Conduit Flanges to fit ⅝in. Conduit.

Cat. No. AN1—w/male thread ..	**4D.** each
Cat. No. AN2—w/female thread	**4D.** each

LAMPHOUSE GUARANTEE

Any goods that prove in any way unsuitable may be returned undamaged within seven days from receipt and your money will be refunded in full.

SUPREMACY — THE GAME OF THRILL'S — 19/6 SET

ADAPTORS

For end of cords to fit into light socket for extensions, etc.

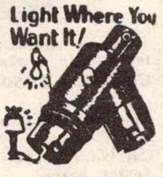
Cat. No. AG210 .. **9D.** each

2-LIGHT ADAPTORS

Two-light Bakelite Adaptors.
Cat. No. AG218

2/11 each

SWITCH TYPE


Light Where You Want It!

Enables an extension to be taken from a lampholder. Provided with a switch so that the centre light can be switched off, leaving the extension going.

Cat. No. AG220 .. .. **3/11** each

Cat. No. AG221—Heavier type **5/11** each

LAMPHOLDERS

CORDGRIP TYPE. BAKELITE—

Cat. No.	Each
AG250—With skirt	1/11
AG251—Without skirt	1/6
AG252—With switch, with skirt ..	5/6
AG253—With switch, without skirt	4/11

BATTEN TYPE—

AG254—With skirt	2/11
AG256—Without skirt	2/2
Cat. No. AG260—With switch, without skirt	4/6

ANGLE TYPE BATTEN HOLDERS—

Cat. No. AG258	2/6

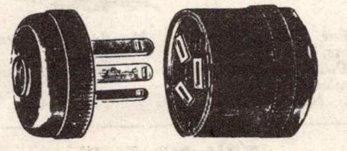
THREADED TYPE—

Cat. No. AG261—½in. Bakelite type ..	2/7
Cat. No. AG263—½in. N. Plated Metal type	2/9
Cat. No. AG268—⅝in. conduit thread metal	2/9
Cat. No. AG269—⅝in. bakelite type ..	2/9
Cat. No. AG264—½in. with switch ..	5/9

E.S. HOLDERS—

Cat. No. AG273—Batten type	3/6
Cat. No. AG274—Cordgrip type ..	3/9
Cat. No. AG275—⅝in. Bakelite	3/6
Cat. No. AG278—Goliath screw type ..	7/9

CORD CONNECTORS (3-Wire)



Cord Connectors for joining three-wire cord. Moulded in bakelite. Titegrip. N.Z.-made

Cat. No. AG25/414—Complete **3/-** each

Cat. No. AG25—Body only .. **1/9** each

Cat. No. AG414—Side Entry. Plug Top .. **1/-** each

INDUSTRIAL CONNECTORS

Consisting of all-rubber three-pin Plug and rubber-covered Connector body.

Cat. No. AG26 .. .. .. **7/6**

CONNECTORS FOR A.C. MAINS

This two-piece Connector gets over the difficulty of joining two power leads, etc. Made of best bakelite, they are strong and easy to pull apart.

Cat. No. AG18—Complete .. **3/-**

CONNECTORS— 2-WIRE BLOCK

Porcelain Insulated Connector for joining wires, etc.

Cat. No. AG29—Single Wire .. **8D.** each

Cat. No. AG28—Two Wire .. **1/-** each

Cat. No. AG27—Three Wire .. **1/3** each

CONNECTOR STRIPS

These constitute 12 connectors (similar to above) moulded in bakelite on long, narrow Strip. Strips can be subdivided to give any number between one and twelve connectors. We can break strips to whatever number of connectors you require.

5/- STRIP OF 12 OR **5D.** per connector
Cat. No. AG30

PLUG TOPS FOR APPLIANCES

Plug top that fits on to the cord of appliance for plugging into the wall.

Cat. No. AG412—2 Pin Tee Plug ..	9d. ea.
Cat. No. AG410—2 Pin Parallel Plug ..	10d. ea.
Cat. No. AG415—3-pin Handgrip Plug Cap	9d. ea.
Cat. No. AG414—3 Pin Side Entry Plug	1/– ea.
Cat. No. AG425—3 Pin Side Entry Plug with rubber protecting cap	1/11 ea.
Cat. No. AG428—Heavy 3 Pin Rubber Plug Top	3/6 ea.
Cat. No. AG421—Heavy duty Bakelite moulded "Amalite" 3 Pin Plug Top	3/1 ea.
Cat. No. AG420—Ditto, Moulded in Ivory Colour	3/6 ea.

WALL PLUGS AND BASES

3 pin Side Entry Bakelite Plug Top and 10/15 amp. 3 pin Wall Base.

Cat. No. AG414/402

2/6 each

T Pin Top entry Plug Top and 10/15 amp. T pin Wall Base.

Cat. No. AG412/400

2/3 each

WALL BASES

TITEGRIP 10/15 amp. 3-pin PLUG BASES.
Cat. No. AG402 .. .. **1/6** each

"AMALITE" 15 amp 3-pin PLUG BASES. Heavy Job. Cat. No. AG403 .. **2/6** each

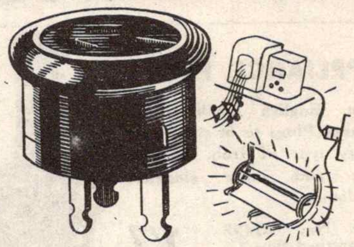
TITEGRIP "TEE" 2-pin PLUG BASES.
Cat. No. AG400 .. .. **1/6** each

PARALLEL 2-pin PLUG BASES.
Cat. No. AG401 .. .. **2/-** each

CABLE CLIPS, BUCKLES

Cat. No. AG514 .. **1D.** each, **8D.** doz.

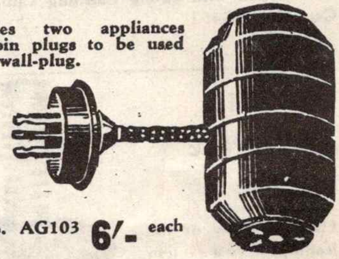
PLUGS, DOUBLE THREE-PIN



A useful plug where it is desired to take two leads from one three-pin socket. The plug illustrated is fitted to the appliance or radio cord. A standard 3-pin plug can then be inserted into the top of it.

Cat. No. AG433 .. .. .. **1/9**

LAMPHOUSE 2-WAY ADAPTORS



Enables two appliances with 3-pin plugs to be used from a wall-plug.

Cat. No. AG103 **6/-** each

Similar to above but for two pin (Tee) plugs
Cat. No. AG104 .. .. .. **6/-**

LAMPHOUSE GUARANTEE

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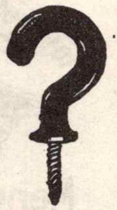
INSULATED SCREW EYES



The wiring regulations state that all flexible cords running along walls and ceilings must be supported by an insulated screw eye every 12 inches. Well, here they are, moulded in plastic. Clear, Cream, and Amber colours.

Cat. No. AS353 .. **4D.** each

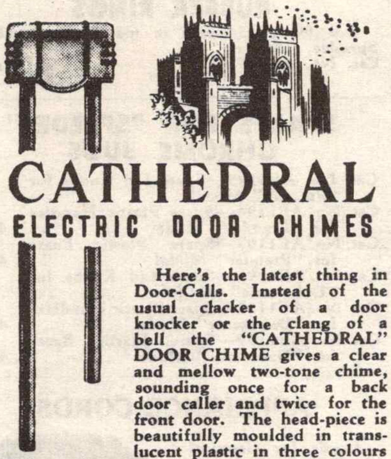
PRICES ARE SUBJECT TO ALTERATION

All Prices in this book must be regarded as an indication only—all orders will be executed at ruling prices.

THE ELECTRIC LAMP HOUSE LIMITED,
11 MANNERS STREET,
WELLINGTON, C.1.

BELLS — BELL MATERIAL

DING-DONG !



CATHEDRAL
ELECTRIC DOOR CHIMES

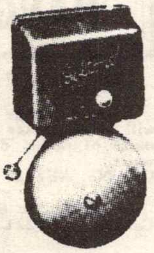
Here's the latest thing in Door-Calls. Instead of the usual clacker of a door knocker or the clang of a bell the "CATHEDRAL" DOOR CHIME gives a clear and mellow two-tone chime, sounding once for a back door caller and twice for the front door. The head-piece is beautifully moulded in translucent plastic in three colours—Walnut, Cream, and Brown—to blend with all interior finishes. The two tubes are of a polished gleaming, brass, laquered to withstand tarnishing, machined to provide resonant tones. The unit works in conjunction with a 6 Volt supply (4 No. 6 Cells) and two bell pushes. Full instructions with each set.

Say Goodbye now to all that noise and clatter and invest in a "CATHEDRAL" DOOR CHIME. Cat. No. AG323 .. **67/6**

Supplied complete with batteries Cat. No. AG323A and two bell pushes **87/-**

Supplied complete with Transformer for use from the ordinary 230 volt mains. With two bell pushes.
Cat. No. AG323B **95/-**

Best British BELL



British. Pressed iron frame. Silver contact points. Terminals under cover. Nickel-plated steel gong, 2¾in. diameter. Bakelite case. For battery or 4-volt A.C. operation.

Cat. No. AG320 **5/6**

BRITISH MADE
Busy Bee
GOLTONE

BRITISH BUZZER

British good quality Buzzer in bakelite case.

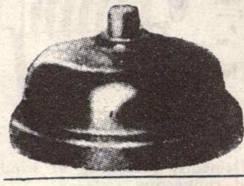
Cat. No. AG319
5/- each

BELL BATTERIES
See Page 46

SQUARE BELL PUSH

Attractively designed in moulded Bakelite. Size, 2in. square.
Cat. No. AG333 **2/3**

"ROUND" BELL PUSH



Good quality Brown Bakelite Push; 1¾in. diameter.

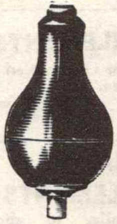
Cat. No. AG334
1/11 each

"Cubist" BELL PUSH

Bell Push of exceptionally attractive appearance, suitable for inside or outside use. Moulded Bakelite. Sixe 2⅝in. x 2in.

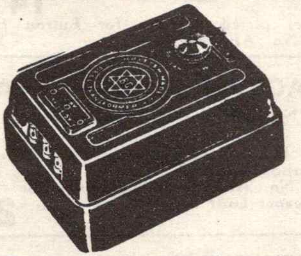
Cat. No. AG332
1/11 each

BAKELITE PEAR PUSHES



Bell Pear Push for cord suspension. Attractively finished in moulded bakelite. The plunger is of polished bone.
Cat. No. AG335
1/11 each

BELL TRANSFORMERS



Bell Transformers for 230-volt supply. Output 3/5/8 volts. Moulded into an attractive bakelite case. British.
Cat. No. AG339 .. .. **17/9** each

BELL WIRE

Best quality British Bell Wire. Well Insulated Waxed Covering. Single Strand.

Cat. No. AW113—1/22 S.W.G. .. **2D.** yd.

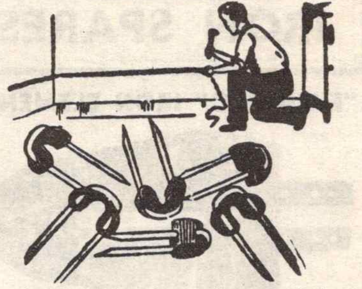
Cat. No. AW113A—1/22 S.W.G. 60ft. coil .. .. .. **2/3** coil

PLASTIC BELL WIRE

Single strand Plastic covered English Bell Wire. Several colours. In 60ft. coils only
Cat. No. AW108 .. .. **2/-** coil

BELL STAPLES

INSULATED STAPLES
Make a Neat Job!



Insulated Staples for tacking up bell wire.
Cat. No. AS118 .. .. **2½D.** doz.

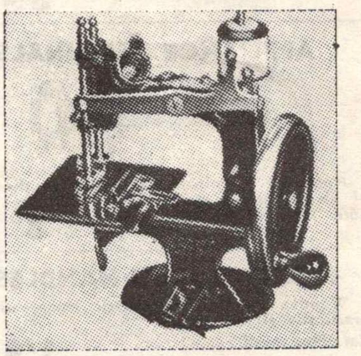
Packets of 50 .. .. .. **9D.** packet

TWIN WIRE

Twin twisted flexible cable. Rubber insulated and covered overall with a black waterproof braid. Excellent for bell and telephone work and for all low tension circuits.
Cat. No. AW87 .. .. **4D.** yd.

Gift for Girls!

PETER PAN SEWING MACHINES



The Peter Pan sewing machine is more than a toy; it has been expertly designed and is mechanically perfect and small jobs such as hemming handkerchiefs and patching can efficiently be carried out with this machine. Your daughter can make all her own doll's clothes thus training her for the practical sewing required later in life. Peter Pan is the perfect miniature sewing machine—fascinating, instructive and safe. Complete with full instructions. Size 7in. x 7in. x 3½in.

Cat. No. AU110 .. .. .. **44/-**

Cat. No. AU111—
Spare Needles .. .. .. **4D.** ea.

LAMPHOUSE GUARANTEE

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SUPREMACY — THE GAME OF THRILLS — 19'6 SET

TOASTER SPARES

Lamphouse
Even Glo
TOASTER ELEMENTS

"EVEN-GLO" TOASTER ELEMENTS

There's an "EVEN-GLO" ELEMENT to fit every make of Toaster. Made with good quality mica and English Nichrome Ribbon, these elements are a first grade production.

	each
Cat. No. AE1003—Speedee type ..	5/11
Cat. No. AE1004—Hotpoint type ..	9/-
Cat. No. AE1006—Hi-Speed type ..	8/-
Cat. No. AE1007—Magnet type ..	8/-
Cat. No. AE1008—Hecla type ..	8/-
Cat. No. AE1009—Universal 4-Strip	8/-
Cat. No. AE1010—Westinghouse type	8/-
Cat. No. AE1011—Effesca	8/-
Cat. No. AE1012—Servex	8/-
Cat. No. AE1013—Ultimate	8/6
Cat. No. AE1014—Majestic type ..	7/6
Cat. No. AE1015—Monarch type (2-strip)	8/-
Cat. No. AE1017—"Neeco Chevron" type	9/-
Cat. No. AE1018—Electroway type ..	8/-

TOASTER TRAYS

Cat. No. AE303—For "Speedee" Toasters (Size overall 10¾in. x 7in.) .. **5/3** each

Cat. No. AE305—For "Speedee Tiffin" Toasters .. .. **7/6** each

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TOASTER SPRINGS

Coiled Springs. Suitable for practically all makes of Toasters.
Cat. No. AE985 .. .. **7D.** each

TOASTER KNOBS

ROUND KNOB. Suitable for Toaster Doors, Kettle Lids, Saucepan lids, etc.
Cat. No. AE984 .. .. **5D.** each

FLAT KNOB. For "Speedee" Toaster Doors.
Cat. No. AE983 .. .. **6D.** each

SPARES

We have only listed on these pages spares for the more popular type of appliances. If you need a spare part for any electrical appliance please write. WE MAY BE ABLE TO HELP YOU!

"DORMEYER" MIXER BOWLS

Spare Bowls, Clear Glass for Dormeyer Electric Mixers.

Cat. No. AE821—Large **19/6**

Cat. No. AE822—Small **10/6**

RADIATOR SPARES

SPIRAL ELEMENT WINDINGS

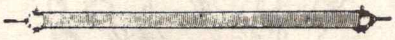
Spiral Element Windings for re-winding Radiator, Stove, and Hotplate Elements, etc., etc. Made of first grade English Resistance Wire.

Cat. No. AE1111—230 volt, 600 watt **2/-**

Cat. No. AE1112—230 volt, 750 watt **2/3**

Cat. No. AE1113—230 volt, 1000 watt **2/6**

PENCIL ROD ELEMENTS



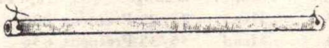
"Even-Glo"

8½in. Element, 800 watt with end cap and Fixing Screws
Cat. No. AE1118 .. .. **7/6**

10in. Element, 1000 watt, with end caps and fixing screws.—Cat. No. AE1117 .. **7/6**

Ditto, 12in., 1000 watts.
Cat. No. AE1119 .. .. **12/6**

" OXFORD "



9½in. Replacement Element, without end caps. Heavy twisted end leads for secure contact. Made for "Speedee" and similar Radiators. 1000 watts.—Cat. No. AE1116 **5/6** each

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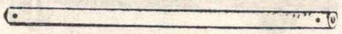
PORCELAIN ELEMENT BARS



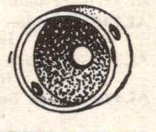
Round Porcelain Bars for Radiator Elements, etc. Unwound. Size 9⅝in. x ⅝in. diam.

Cat. No. AE1101 .. .. **2/3** each

Cat. No. AE1100—8½in. x ⅝in. **2/3** each

METAL END CAPS

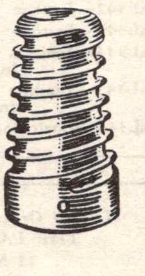
Metal End Caps for Radiator Elements. The small cup measures ⅝in. diameter with a depth of ⅜in. Holes either side of lip and main centre hole to take holding bolt.
Cat. No. AE1102 **5d.** ea.



ELEMENT FORMERS

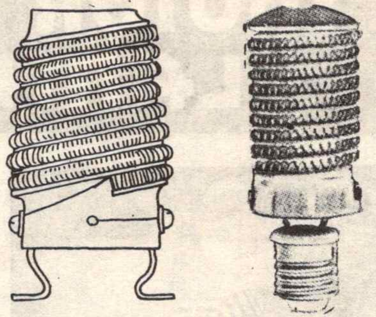
Cone-type formers for bowl-type electric fires, etc. Porcelain, with grooves to take standard windings (750-watt suggested). No base or supports are included. Former is drilled bottom and top to simplify attaching the spiral. Height 3in., diam. 1⅛in.

Cat. No. AE1109—
4/3 each



BOWL FIRE ELEMENTS

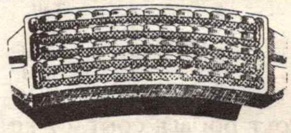
"FITZALL" BOWL FIRE ELEMENTS



This type of Element can be adapted to numerous makes of Bowl Fire Radiators. Radiators with elements using the plug-in or screw-in base may, with slight adaption, take this type of element. Distance between screw holes on legs of former 1½in. 750 watt spiral.
Cat. No. AE1104 .. .. **7/9** each

Similar to above but fitted with a screw-in base.
Cat. No. AE1105 .. .. .. **8/3**

RADIATOR ELEMENTS



Large tile, 9½ x 3⅛, 1000 watts. Complete.
Cat. No. AE1133 .. .. .. **14/6**

Small tile, 7⅝ x 3, 1000 watts.
Cat. No. AE1134 .. .. .. **12/3**

ELECTROWAY RADIATOR ELEMENTS

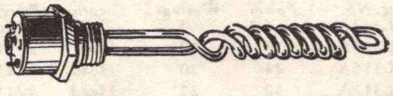
Short tubular Pencil Element 8in. x ½in.
Cat. No. AE1120 .. .. .. **9/6**

Long tubular Pencil Element 11in. x ½in.
Cat. No. AE1121 .. .. .. **10/6**

Small Tile Element 7⅝in. x 3in.
Cat. No. AE1136 .. .. **11/-**

Large Tile Element 9¼in. x 3in.
Cat. No. AE1137 .. .. **12/6**

"COYLROD" TANK HEATERS



Water Heaters for permanent installation in Tanks, Water Cylinders, etc.
Cat. No. AE540—750 watt .. **22/-** each

Cat. No. AE541—1000 watt .. **22/-** each

Cat. No. AE547—1500 watt, 3 heat type .. .. **37/6** each

Brass Flanges for fixing above.
Cat. No. AE543 .. .. .. **5/9** set

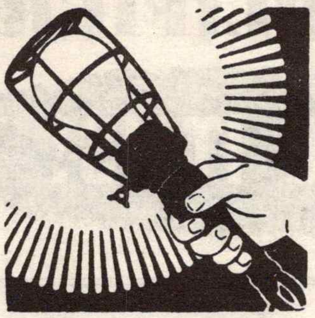
MAIL ALL ORDERS TO . . .

THE
ELECTRIC LAMPHOUSE
LIMITED.

11 Manners Street, Wellington, C.1.

MOTOR CAR ACCESSORIES

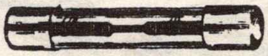
GARAGE HANDLAMPS



The ideal INSPECTION LAMP for workshops, garages, factories, etc. Take the light where you want it most. Wooden handle, strong wire protective frame. Fitted with bakelite shockproof lampholder. Globe and Flex extra.

Cat. No. AE95 .. .. .. **19/6**

MOTOR-CAR FUSES

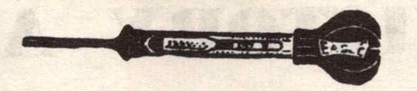


Cat. No. AX1426—1.5 amp.
Cat. No. AS200— 5 amp.
Cat. No. AS201—10 amp.
Cat. No. AS202—15 amp.
Cat. No. AS203—20 amp.

5D. each

Length 1¼in.

BATTERY TESTERS

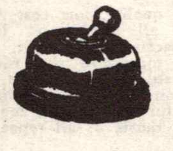


Hydrometers for testing Car or Radio Batteries. Full size, glass tube type giving an instantaneous, accurate reading. Rubber bulb and nozzle. Don't be stuck—keep a check on your Car Battery yourself.

Cat. No. AM300 .. .. **7/6**

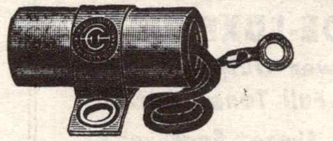
MINIATURE SWITCHES

Here's a handy little switch suitable for radio and motor-car work. Positive action. Nicely finished (nickel plated). British made.



Cat. No. AG118 **2/4**

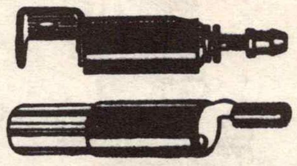
GENERATOR CONDENSERS



Special Condensers for noise suppressors on motor cars. .5MFD, Metal Case, Pigtail connection.

Cat. No. AC657 .. .. **4/3** each

MOTOR CAR RADIO SUPPRESSORS



Spark Plug Type (top illustration). A sturdy unit which meets the most exacting demands for spark plug suppression.

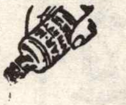
Cat No. AR229 .. .. .. **1/8**

Distributor Type—Cat. No. AR228 **1/11**

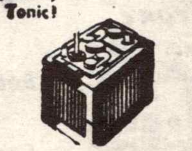
The above suppressors will not affect power or petrol consumption of your engine.

"TAR-MAG"

Battery Tonic!



Use "TARMAG" to give new life to old batteries, and added life to new ones. It dissolves the basic lead sulphate crystals which prevent electrolyte contact and helps your battery to give its best. For better lighting and better starting — TARMAG.

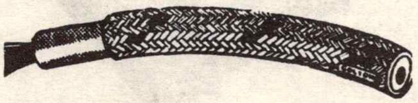


Cat. No. AA70
6 volt charge, 1 bottle **2/9**
12 volt, 2 bottles **5/6**

GREAT AUTO CABLE OFFER!

LARGE QUANTITY, PURCHASED AT A SPECIAL PRICE, ENABLES US TO MAKE THIS OFFER. GENUINE IMPORTED, WITH HEAVY RUBBER INSULATION. COVERED OVERALL WITH A GLAZED OIL AND WATERPROOF BRAID.

SINGLE OIL PROOF CABLE



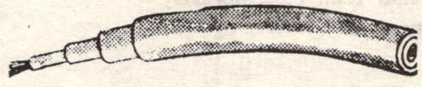
9/012 (No. 18)—Single Flexible Oil Proof Cable. Approx. 4 M.M.

Cat. No. AW300—
Usually 9d. Yard. NOW **5D.** YARD

16/012 (No. 16)—Single Flexible Oil Proof Cable. Approx. 5 M.M.

Cat. No. AW301—
Usually 1/- Yard. NOW **7D.** YARD

7 M.M. HIGH TENSION CABLE



Rubber-covered Ignition Cable, multiple covers of high-grade Rubber. 7 M.M.

Cat. No. AW303—
Usually 10d. ft. NOW **6D.** per ft.

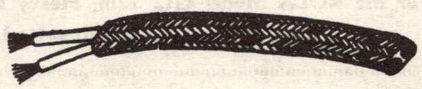
Cat. No. AX1374— 9MM. **4D.** per ft.

TWIN FLEX

Twin twisted flexible cable rubber insulated covered overall with a black waterproof braid. Excellent for low tension extension lamps, etc.

Cat. No. AW87 .. **4D.** YARD

TWIN OIL PROOF CABLE



9/012 (No. 18)—Twin Flexible Oil Proof Cable.

Cat. No. AW311—
Usually 11d. yard. NOW **8D.** YARD

16/012 (No. 16)—Twin Flexible Oil Proof Cable.

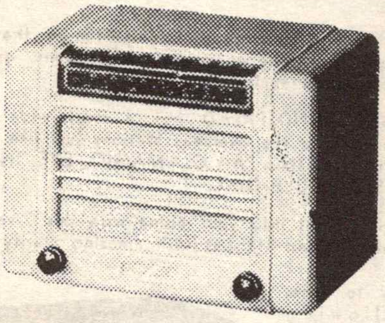
Cat. No. AW312—
Usually 1/- yard. NOW **9D.** YARD

"ENSIGN RADIOS"

"Ensign Pacemaker"

POWERFUL QUALITY, PERFORMANCE, and REPRODUCTION throughout N.Z. Broadcast Band.

MODERN DESIGN—Incorporating Latest Features and Improvements in Radio Design. Latest Loctal Tubes. Uses full Automatic Volume Control preventing fading thus keeping volume uniform on all stations.



Absolute Fidelity

Definitely Unequalled By Any Other Radio In Its Class!

BEAUTIFUL POLISHED PLASTIC CABINET in Mottled Brown, Green, Red, or Ivory. Dimensions: Height, 7in.; Length, 9¾in.; Breadth, 6½in. 5 tubes.

QUALITY CONSTRUCTION — Using only the finest standard components throughout.

SUPERB TONE with a fine fidelity 5in. P.M. Speaker.

REASONABLE LOW PRICE

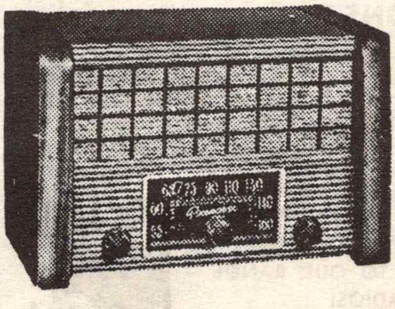
Cat. No. AR729 (Ivory)	**£19/8/6**
Cat. No. AR729A (Other colours)	**£18/18/6**

Battery Pacemaker

Ideal for situations where power is not available!

WORKS FROM 6-VOLT BATTERY

Sets the pace



IDEAL FOR PEOPLE IN THE COUNTRY OR FOR TRAVELLING USE.

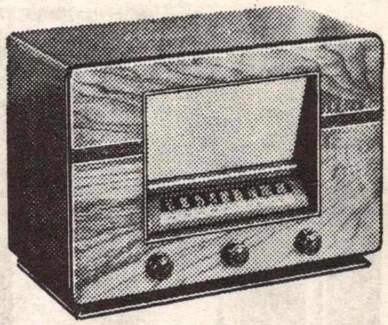
Uses five of the latest Miniature low-drain Valves — tone and volume controls — low battery drain only .75 amp.

Fitted with Special 5in. P.M. Speaker and mounted in attractive veneered Cabinet.

Cat. No. AR735— **£30/10/-**

"Ensign" 6-Tube "Pacemaker" Broadcast

Unequalled in New Zealand for their Sterling Performance, Exceptional Tonal Quality, Expert Workmanship, and Low Cost.



The 6-Valver is a right-up-to-the-minute Receiver giving amazing results on the Broadcast band. A 6½in. Anisotropic Alnico "Rola" Speaker is used, giving an unsurpassed rich and mellow tone. As is usual with "Ensigns," the latest in components is used and the Valves are as follows: 6SG7, 6SA7, 6Q7G, 6U7G, 6V6GT, 6X5GT.

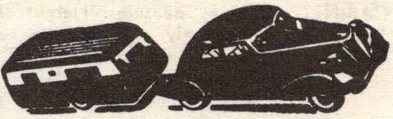
The distinguished Cabinet, measuring Length, 17in.; Width, 8¼in.; Height, 11., is of the highest quality veneer and in keeping with the general standard of the set.

NO AERIAL OR EARTH IS NECESSARY! See the "ENSIGN" 6-VALVE RADIO described below.

TUNING, VOLUME and TONE Controls are mounted on the front of the Cabinet, as illustrated.

Cat. No. AR734 .. .. **£28/10/-**

"Motorola"



6 VALVE CAR RADIO

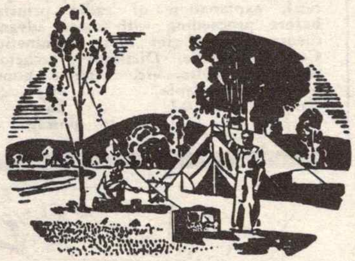
We are again able to offer the well-known "MOTOROLA" Car Radio. A powerful 6 valve Auto Radio with speaker enclosed with set. Remote control unit has bracket attached for easy attachment to dashboard. Measures 5½in. in length, 1½in. deep. Attractively designed and giving an excellent performance the "MOTOROLA" is "tops" in Car Radios available today.

Metal cabinet housing set measures: Length, 9½in.; height, 6½in.; width, 5in. and is attactively finished with ivory plastic front.

Cat. No. AR780— **£37/10/-**

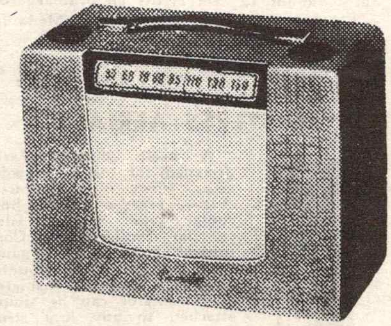
AS ABOVE, BUT FOR 12 VOLT.
Cat. No. AR782— **£37/10/-**

THE
ENSIGN
"PACEMAKER"
A.C. AND BATTERY
PORTABLE



CAMPING

Here's a Radio that can be used anywhere. Operates from both the POWER POINT or from SELF-CONTAINED BATTERIES. You get real entertainment wherever you go with an "ENSIGN" PACEMAKER TWO-WAY PORTABLE. In the Car, on the boat or train, at the beach, hiking, picnicking, tramping or in the home—just one flick of the finger and its at your service.

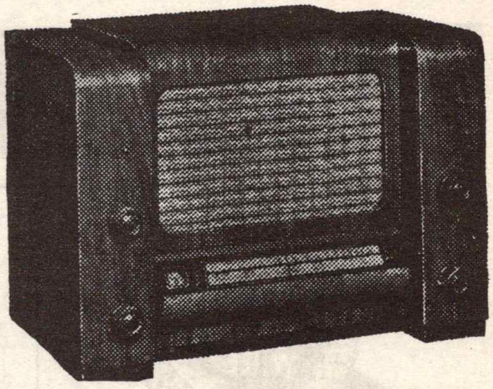


Brings in all N.Z. Stations. NO AERIAL OR EARTH necessary. Uses Five of the latest midget Valves. An anisotropic 5in. Speaker for that "easy on the ear" tone. Cabinet Measurements: 12in. x 9in. x 6½in. Weight: 15lb. 4oz. (with Batteries). Uses two Eveready 482 "Minimax" Portable Batteries, one C12 Eveready Battery. Also fitted with 5ft. flex for using from the light socket or power point.

IT'S CONVENIENT!
IT'S NEAT!
IT'S THE BEST!

Cat. No. AR737 .. .. .. **£32/10/-**

ENSIGN
7-VALVE DUAL WAVE



It's an exciting Model with a performing ability you can't beat anywhere at the price.

BRINGS THE WORLD RIGHT INTO YOUR HOME

Super sensitive circuit—there is no finer 7-tube circuit built. Uses all the latest type tubes—2 6U7G, 1 6Q7, 1 6V6GT, 1 6X5GT, 1 6U5 and 1 6K8GT.

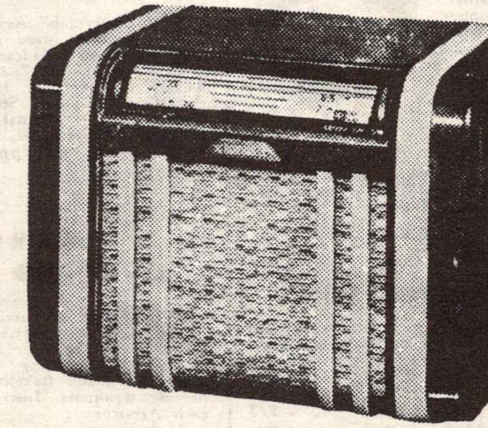
R.F. Stage increases sensitivity at least seven times, results in greater distance reach, finer tone and reduced interference. Reduces and eliminates background hiss and noise.

Magnificient Tone. If you are looking for that full richness and fidelity of tone, just the way it is when it leaves the broadcasting studio, you'll find it in the "ENSIGN 7." It develops full four watts output which is beautifully handled by the heavy-duty 8-inch concert-dynamic speaker. Continuously variable tone control lets you emphasise bass and treble tonal ranges to suit your personal taste. Cabinet, richly veneered. Length, 19in., height, 13½in., width 11in.

BRING THE WORLD RIGHT INTO YOUR HOME ON THE NEW ROLLER DIAL!

Cat. No. AR732 .. .. **£44/5/-**

ENSIGN
5-VALVE DUAL WAVE



The "ENSIGN D/W 5" will be your big thrill with its wonderful realistic tonal quality—its powerful two-band reception.

Both Broadcast and Dual-Wave reception, with amazing clarity and tone for such a small set. Consider, too, its advanced circuit features, its sturdy dependability, its ultra-modern Roller Dial assembly, its excellent workmanship throughout. Employs all the latest type tubes—6K8GT, 6SG7, I.F., 6SQ7, general purpose Det.-A.V.C.-1st Audio, 6V6GT Beam Power Output, 6X5GT Rectifier.

Full automatic volume control maintains uniform level and prevents fading; beam power output provides plenty of volume; full 5in. P.M. Speaker gives you better tonal quality; quality component parts throughout increases circuit stability. The striking little Cabinet measures only: Length 11½in., height 8½in., width 8in.

Cat. No. AR731 .. .. **£26/15/-**

6-VALVE DUAL WAVE
(WITH MAGIC EYE)

Similar to the 5 valve described above but with a Magic Eye added. Incorporates 8in. P.M. Speaker giving excellent tonal quality. Cabinet measurements: Length 15½in., height 11½in., width 8¼in.

Cat. No. AR743 .. .. **£34/5/-**

ESSENTIALS FOR YOUR AERIAL!

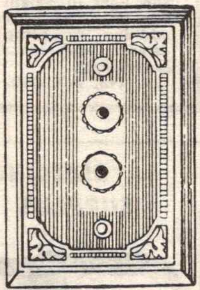
LEAD-INS, EBONITE

Lead-ins are used for putting through the wall. Consists of brass rod insulated with ebonite. With a nut and washer on each end. Diameter ½in. Ebonite Lead-in, 9in. long.
Cat. No. AA404 .. .. **1/11** each

FLEXIBLE LEAD-IN STRIPS

Flexible Lead-in Strips that can be fitted under windows, when it is not desired to bore a hole through the wall to install a permanent lead-in Tube. Length 9in.
Cat. No. AA405 .. .. **1/3** each

AERIAL AND EARTH PLATES

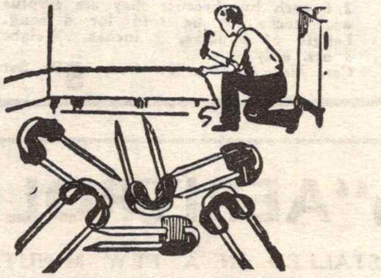


Eliminate those unsightly wires leading to your set by having them concealed in the wall. This beautiful moulded plate is fitted with two terminals on to which the Aerial and Earth leads to your set connect. The Aerial and Earth proper are connected at the rear of the plate. Moulded in Ivory or Brown Plastic. Modern design.

Cat. No. AA460—Brown plastic .. **2/4**

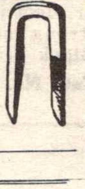
Cat. No. AA461—Ivory plastic .. **2/9**

INSULATED STAPLES
Make a Neat Job!



Insulated Staples are used by all who wish to make a neat job. The fibre insulation in these staples protects the wire and guards against loss of signal strength. British made.
Cat. No. AS118 **2½**D. doz. or **9**D. pkt. 50

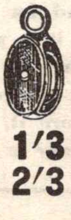
STAPLES



Coppered Staples (not insulated), for fastening earth wires, etc.

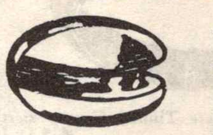
Cat. No. AS119— **1½**D. doz.

PULLEYS—GALVANISED



Cat. No. AA412— 1-inch Galvanised Pulleys .. **1/3** each
Cat. No. AA413— 1½-inch Galvanised Pulleys .. **2/3** each

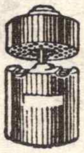
EGG INSULATORS



Egg Insulators are almost universally used in N.Z. To secure good results you should put two or three on each end of the aerial. N.Z. made.
Cat. No. AA600 .. .. **5**D. each

LARGE EGG INSULATORS
2in. long and 1½in. diameter. Brown glazed.
Cat. No. AA606 .. .. **10**D. each

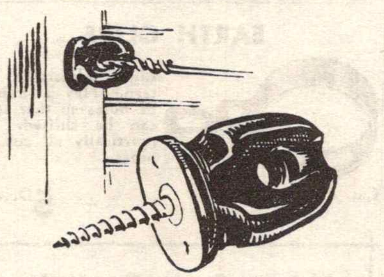
CLAMP INSULATORS



Used for taking wires along outside walls, etc. Made in two pieces, and when screwed up, grip the wire and make a neat and efficient job. 1¾in. high, 1⅝in. diameter.

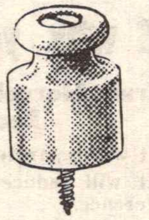
Cat. No. AA603 .. **7**D. each

HOUSE INSULATOR



Used for insulating electrical equipment from the house. Very solidly constructed; has a screw of 2in. length and the porcelain portion measures 3in x 2¼in.
Cat. No. AA602 .. .. **2/2** each

"BUTTON" INSULATORS

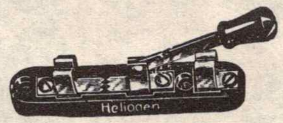


For use on Electric Fence installations and for installing wires run along walls, etc. N.Z. made. Brown glazed.

1½ x 1⅛—Cat. No. AA604
4d. ea., 3/10 doz.
(Screws not included)

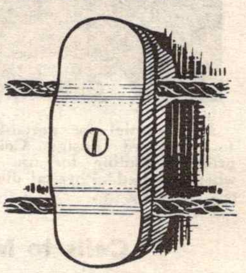
Cat. No. AT588 2in. x 11 wood screws for use with above .. 8d. doz.

KNIFE SWITCHES



Single Pole Double Throw Aerial-Earth Switches. Bakelite base. British.
Cat. No. AS490 .. .. .. **1/6**

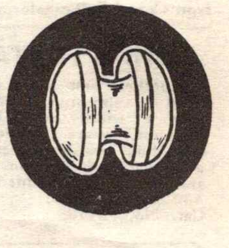
"CLEAT" INSULATORS



Cleat Insulators for running two wires along walls, etc. 2½in. long, 15/16in. wide, ¾in. high.

Cat. No. AA605
7D. pair

SHACKLE INSULATORS



Used for corner insulators on Electric Fence Units and for other purposes requiring a substantial insulator. Size: 2¼in. diam., 1¾in. high, ⅝in. hole.
Cat. No. AA607
1/2 each

LAMPHOUSE GUARANTEE

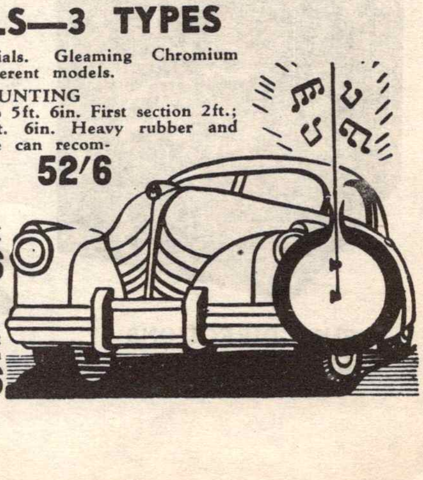
Any goods that prove in any way unsuitable may be returned undamaged within seven days from receipt and your money will be refunded in full.

PRICES ARE SUBJECT TO ALTERATION

All prices in this book must be regarded as an indication only—all orders will be executed at ruling prices.

AUTO AERIALS—3 TYPES

"WALBAR" Australian made Motor Car Aerials. Gleaming Chromium plating—Guaranteed Rustless. 3 different models.



3 PIECE DE-LUXE SIDE MOUNTING
A really finished article. Extends in three pieces to 5ft. 6in. First section 2ft.; second section to 4ft. and third section to 5ft. 6in. Heavy rubber and chromium mounting plate for side mounting. We can recommend this as a first class De-luxe Aerial.
Cat. No. AA324 .. .. .. **52/6**

3 PIECE STANDARD SIDE MOUNTING
Extends the same as the De-luxe model to 5ft. 6in. in three sections. Has two sliding plastic cups for firm mounting to side of car.
Cat. No. AA325 .. .. .. **42/6**

2 PIECE WINDSCREEN MOUNTING
Extends in two pieces to 3ft. 9in. First section 2ft., second section 1ft. 9in. Provided with fastening bolt and clip to attach to centre metal strip on windscreen.
Cat. No. AA326 .. .. .. **32/6**

Cut Out Interference!

The "ENSIGN" LINE FILTER

E-O-W-
F-T-T-T-S
PF-T
BANG
C.R.A.C.K
W-W-O
STOP
Man Made Interference!

Try this "Policeman of the Airways" at our Risk!

These useful Units have two distinct purposes:

1. To stop interference entering the A. C. Mains at the source of the trouble.
2. To stop interference coming over the Mains from entering the Receiver.

The best place to stop interference is at its source and if you have a small motor or other Appliance which causes interference in your own or anyone else's Radio, it may be successfully cured by installing an Ensign Filter. The Filter is plugged in to the Power Point and the offending appliance plugged into the Filter. No other installation is required. It can be used on any appliance not exceeding 750 watts. Should it be impracticable to stop the trouble at its source, we must try and stop it from entering the Receiver.

We must decide whether the man-made static, which is proving so troublesome, is being picked up by the aerial or is coming over the power lines or both. A good test is to tune the set to a point where the noise is particularly bad and turn the volume control well up. Now remove the aerial wire and attach it to the earth terminal, but do not remove the earth wire. The effect will be to reduce the noise level, but if the man-made static continues to be very severe you will at once know that at least a portion of the interference is coming over the A.C. power mains, and you will at least need an Ensign Line Filter before you can overcome the trouble. On the other hand, if the noise is entirely eliminated you will know that the noise is being picked up by the aerial and some form of noise-reducing aerial will be required.

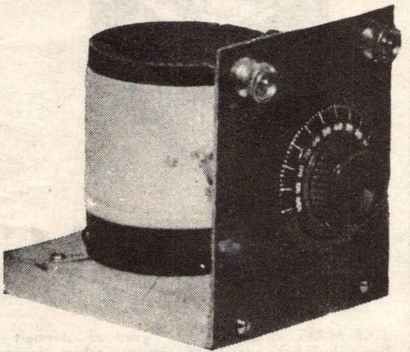
Designed for use with electrically operated radio receivers. Simply fits between the receiver and the wall plug. It will definitely stop all man-made static entering through either A.C. or D.C. Mains. Particularly successful in D.C. and on ships with D.C. generators.

Cat. No. AA5 .. .. .. **25/6**

MONEY BACK OFFER

There is no risk in this purchase. Send for the "ENSIGN" LINE FILTER now and try it out. If you are not completely satisfied (You're the Judge) return it within 7 DAYS and we will refund your MONEY IN FULL!

THE "SIDNEY" WAVE TRAP



Used to separate stations which interfere or overlap each other. Gives sharper tuning to all size Receivers from Crystal Sets onwards. Will also act as a booster for strengthening weak stations.

Components mounted on a 4in. x 3½in. wooden baseboard. Front panel of light bakelite. Neat appearance. Printed instructions with every set.

Cat. No. AA12 .. .. Price **15/11**

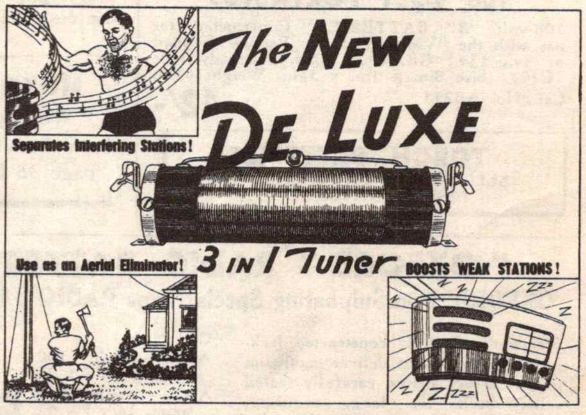
WAR SURPLUS BARGAINS

There's dozens throughout this catalogue. DON'T MISS OUT ON THEM . . . ORDER NOW!

The 3 in 1 RADIO TUNER

SERVES 3 BIG PURPOSES

1. ***Aerial Eliminator.***
2. ***Station Booster.***
3. ***Separates Interfering Stations.***


The New
DE LUXE
3 IN 1 Tuner
Separates Interfering Stations!
Use as an Aerial Eliminator!
BOOSTS WEAK STATIONS!

Besides making an excellent variable Coil for Crystal Sets., etc.

Depending on the manner it is connected, this useful piece of apparatus serves any of the above functions. Operates on any make or model of radio receiver, greatly enhancing the performance. As an aerial tuner it will improve the reception of weak stations.

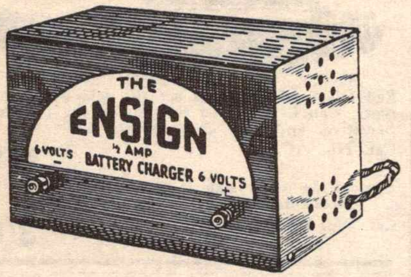
As a wave trap it will prevent interference between stations and improve selectivity. As an aerial eliminator it makes an outdoor aerial unnecessary. The tuner can also be used as the tuning coil of a crystal or other small set. Supplied complete with instructions and can be fitted by anyone in a few minutes. Size 5in. long x 2¼in. high and 1¾in. wide. Printed details with each Tuner,.

BUY UNDER OUR 7 DAY MONEY BACK GUARANTEE!

DE-LUXE MODEL
Cat. No. AC300— ONLY 6/11

CHARGERS – RECTIFIERS – VIBRATORS

THE "ENSIGN" ½ AMP CHARGER



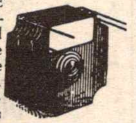
You never need to be stuck with a run-down Car or Radio Battery. These units will charge all types of 6-volt Batteries. Operate from 230 volt A.C. Current. Connect direct to Battery. Uses ½ amp. Dry Metal Type Rectifier. Size of Sprayed Metal Case: Length 8in., Height, 5½in.: depth, 4in.
Cat. No. AA220 .. .. **£4/12/6**

SPARE BULBS FOR BATTERY CHARGERS

(TUNGAR TYPE.)

Cat. No. AA189—2 amp. .. **32/6** each
Cat. No. AA190—6 amp. .. **50/-** each

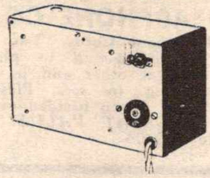
DRY RECTIFIERS



6-volt, ½-amp. METAL PLATE RECTIFIERS. Suitable for Resistance or Inductive loading and Battery Charging, etc. For use with C.T. Transformer. Voltage across Secondary, 19 volts. C.T. at 9.5 volts. Copper on Secondary carries .35 amp. continuous running.—Cat. No. AA175 .. **18/6** each

6-volt, 2-amp. similar to above. Suitable for 2-amp. Battery Chargers. Copper on Secondary carries 1.4 amp. continuous use.
Cat. No. AA176 .. .. **33/6** each

"OXFORD" VIBRATOR PACK



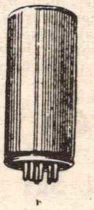
This pack has been designed specifically for the conversion of battery radio receivers to vibrator operation and contains the necessary high tension and low tension filtering.

ELECTRICAL SPECIFICATIONS: Input, 6 volts 1 amp.; Output, 135 volts 30 milliamp.; Reed, 5 pin synchronous.

FILTERING: Complete filtering is provided both for R.F. and Audio. This means to say that in addition to the normal R.F. chokes, there is included in the unit a high tension filter choke and a low tension filter choke.

MECHANICAL ARRANGEMENT: The reed, transformer and R.F. chokes are contained in a completely enclosed box which is rubber-mounted on to the base chassis. The rubber mounting eliminates mechanical noise due to the vibrator operation. Totally enclosed in a heavy aluminium case measuring 9in. x 5¾in x 3in.
Cat. No. AA213 .. .. **£7/19/6**

VIBRATORS



Vibrator Units for replacements or for constructors. Positive starting long-life Vibrators. Low cost per hour. Trouble-free operation.

6-volt Non-synchronous 4-pin type.
Cat. No. AB60 .. .. **25/-**

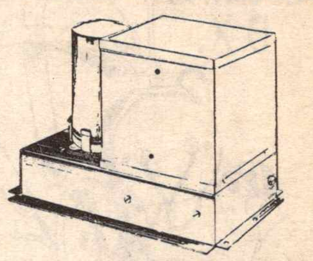
6-volt Synchronous 5-pin type (for special socket).
Cat. No. AB61 .. .. .. **27/6**

6-volt Synchronous 5-pin type (standard socket).
Cat. No. AB62 .. .. .. **27/6**

6-volt Synchronous 6-pin type
Cat. No. AB64 .. .. **27/6**

Sockets for Vibrators—5-pin special type.
Cat. No. AB63 .. .. .. **1/-** each

WAR SURPLUS BARGAINS

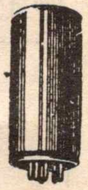


12-Volt Vibrator Pack

A real heavy duty Power supply for that vast field of battery operated multi-tube Receivers, medium power Public Address Systems and low power Transmitters. Completely enclosed in a heavy metal cadmium-plated box with hash filter. They are ideal for short-wave Receivers. The dimensions are 6in. long by 4in. wide and 6in. deep. Although designed to operate from 12 volt D.C. they can be converted to 6v. The Output is 250 volts at 60 mills. The B Supply smoothing choke and filter condenser are supplied separately. (ZC1 parts)
12 VOLT POWER PACK—
Cat. No. AX1001 .. **£3/-/-**

Spare Transformers for above, 12-volt to 300/180/0/180/300 volts.
Cat. No. AX1088 .. **5/11**

12-VOLT, 6-PIN VIBRATORS



Another great buy—6-pin, 12-volt Vibrators. These have been stored for some time and it is possible that some may need adjusting on the points. Because there are a small percentage like this we offer the lot at the Special Price of
Cat. No. AB67 .. **9/11**

BARGAIN OFFER!

12 Volt 7-Pin Vibrators

Army Surplus stocks. Imported 12-VOLT 7-PIN SYNCHRONOUS VIBRATORS. Worth 27/6.
Cat. No. AB65
OUR PRICE .. **4/11** each

WAR SURPLUS BARGAIN PARCELS!

No. 2 ASSORTED PARCEL

2 IK5G Valves
6 Octal Wafer Valve Sockets
4 3 Link Plastic Insulators
2 Small Pointer Knobs
10 Assorted Tubular Condensers
10 Assorted ½-watt Resistors
2 dozen Assorted Terminal Strips

Items priced individually would total £1/1/3 but supplied as a BARGAIN PARCEL
Cat. No. AX122 .. **15/-** Lot

No. 3 DE-LUXE PARCEL

4 6U7G Valves
1 6X5GT Valve
1 6Q7GT Valve
1 IK5G Valve
1 ILD5 Valve
12 Octal Wafer Valve Sockets
1 0-500 M.A. Micro-Amp. Meter
4 Small Pointer Knobs
1 Complete Aerial Stay Set
24 Assorted Terminal Strips
10 Assorted ½-watt Resistors
10 Assorted Tubular Condensers
2 I.F. Transformers
3 S.C. Jacks
1 Meter Rectifier

Items priced individually would total £6/3/8 but supplied as a BARGAIN CARTON
Cat. No. AX123 .. **£4/10/-** Lot

No. 1 VALVE PARCEL

Comprises SIX VALVES
2 Type 6X5GT
2 Type 6U7G
2 Type 6Q7GT

Separately these valves would total £1/10/4 but supplied as a BARGAIN PARCEL
Cat. No. AX121 .. .. **22/6** Lot

No. 4 METER PARCEL

Comprises THREE METERS

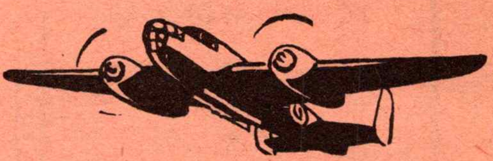
"WESTON" 0-100 M.A. 2½in. Round R.F. Milliameter. Flush mounting—Plastic case. Manufactured in the United States by the Western Electrical Instrument Corporation, and still packed in original sealed carton.

"FERRANTI" 0-500 Micro-Amp. 2in. Round Meter. Flush mounting—Plastic case. Luminised dial. Brand new in sealed cartons.

"DE-JUR" 0-1 M.A. 3in. Round Moving Coil D.C. Meter. Flush mounting—Plastic case 1000 ohms. per volt; internal resistance 60 ohms. Manufactured in the United States. Cartoned brand new.

The true value of these Meters would be in the vicinity of £10 but as a BARGAIN PARCEL
Cat. No. AX124 .. **£5/-/-** Lot

8 MONSTER PAGES



WAR SURPLUS BARGAINS!

GREAT Values!

★★★

BARGAINS WE WON'T BE ABLE TO REPEAT!

ARMY ZC1 TRANSCEIVER AERIALS

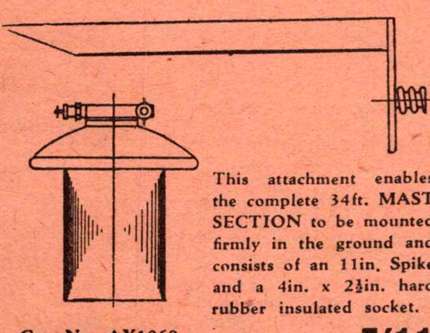
Excellent as House or Car Aerials

Comprises three 6ft. lengths ⅞in. pipe, four 4ft. lengths metal tubing, size varying from ½in. at one end to ⅛in. at the other; set of aerial stays, reducer (for fitting thin section of aerial into heavy section), one rubber socket for heavy section, one rubber socket and insulating condenser for mounting thin (whip) section only. May be used as a vertical house type antenna, or whip section. Could be used as car or caravan aerial. Supplied complete with carrying bags.—Cat. No. AX1085 Price **£2/16/6**

Whip Section Only

Consists of four 4ft. sections Metal Tubing varying from ½in. to ⅛in. diameter. These being approx. 16ft. long and light in weight make ideal elements for 10 metre rotary beam antennas, in addition to being suitable for auto, caravan and home use. Complete in canvas bag.—Cat. No. AX1080 .. Price **12/9**

HEAVY AERIAL MAST BASE

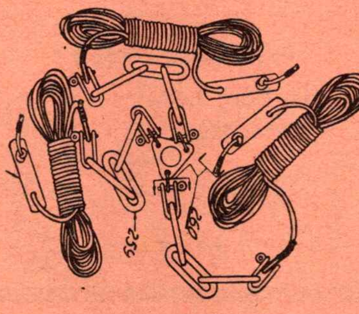


This attachment enables the complete 34ft. MAST SECTION to be mounted firmly in the ground and consists of an 11in. Spike and a 4in. x 2½in. hard rubber insulated socket.

Cat. No. AX1069 .. .. .. **5/11**

GREAT BARGAIN!

AERIAL STAY SETS



Complete 3 rope Aerial Stay Set to give rigid support to your Aerial Mast. Comprises 3 sets of proofed halyard ropes each 24ft. in length with a 3 Link Plastic Chain Insulator on end of each rope. Insulators fasten to centre mounting plate (as illustrated) by means of two U shaped shackles. A wooden tightener is attached to each rope. These Aerial Stay Sets would be great value at 10/- but another bulk purchase from War Surplus enables us to sell at the gift price of
Cat. No. AX1067 .. .. **3/11** set

WHIP AERIAL BASE

This is the attachment for use with the Whip Aerial when mounting on vans, trucks, etc. Consists of a rubber-mounted ssocket and condenser.—Cat. No. AX1068 .. **7/11**

METAL STAY PLATES

Metal plates triangular in shape 2in. x 2in. x 2in. with small ringlets attached to each corner to take ropes (As illustrated with Aerial Stay Set across page). Has 1in. hole in centre. Handy little junction piece for Aerial systems.
Cat. No. AX1299 .. .. **4D.** each

AERIALS ETC.

ZC1 WHIP AERIAL ADAPTOR

Used for joining whip section to main mast section on ZC1 Aerials.
Cat. No. AX1073 .. .. **3/6** each

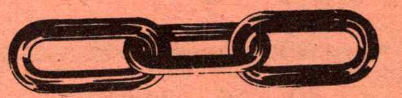
O.S. EGGS

Egg Insulators, large size. 5in. long x 3¾in. diameter.
Cat. No. AX1474 .. .. **2/6** each

BRASS AERIAL RODS

Three foot lengths brass tube, ½in. diameter, threaded so that each end will fit into next section and thus make a continuous length. The experimenter will find many uses for these rods.
Cat. No. AX1509 .. .. **2/6** each

Sizzling War Surplus Bargain



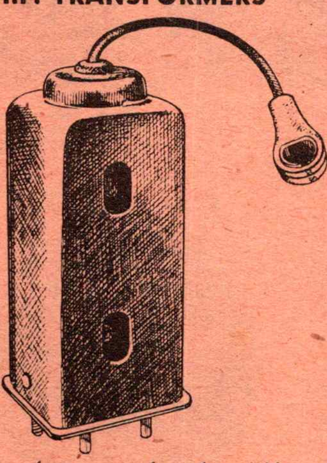
3 Link Plastic Chain INSULATORS

as used in Army Radio Aerials.

Very effective insulators. Put one chain on each end of your aerial. Worth 2/6 each but because they are surplus war stocks, to be sold for a song. Length of 3 links, 9 inches. Weight 3 ozs. only. ONLY
Cat. No. AA601 .. .. **5D.** set

VALUES IN SURPLUS WAR STOCKS

I.F. TRANSFORMERS



Each Transformer tested under rigid army supervision. The finest money can buy, and only half the price of ordinary I.F.S. 465 k.c. Iron Cored.

Cat. No. AX1006—No. 1 I.F. **7′11** each
Cat. No. AX1007—No. 2 I.F. **7′11** each

WAR SURPLUS BARGAINS!

TRANSMITTER EXCITER UNIT

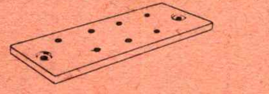
Comprises 3-gang Tuning Condenser and Dial, together with Oscillator and Buffer Coils, R.F. Chokes, 2-gang Wave Change Switch and associated Resistors and Condensers. Ruggedly constructed Unit—cadmium plated. Both coils are completely shielded and provided with switching to cover from 1.9 to 8 M/c. Unit uses two 6U7G Valves—one as an electron coupled oscillator and one as a single ended buffer. These tubes are not included in the price.

Cat. No. AX1009 .. **30′-** each

Similar unit to above, but less dials, R.F. choke, wave-change switch and trimmers.

Cat. No. AX1190 .. **15′-** each

COIL MOUNTING BASES



Seven-hole oblong bases of hi-test ceramic insulating material 4½in. x 1½in. 5-16in. thick. Invaluable for mounting coils and compoents where high insulation is desirable.

Cat. No. AX1502—
¼in. diameter holes .. .. **6**D. each
Cat. No. AX1503—
5-32in. diameter holes .. **6**D. each

CANVAS SATCHELS

Strong canvas carrying bags with lace up top. Measures 11in. length by 4in. diameter. Were used for peg bags with ZC1 Aerials. A handy little satchel for small tools, etc.

Cat. No. AX1250 .. .. **9**D. each

CANVAS HOLD-ALLS

Originally used as carrying caps on ZC1 Aerials. Canvas Bag 5½in. deep x 2½in. diameter with carrying laces eyeletted in. Would serve as a nail holder or screw holder for carpenters, etc.

Cat. No. AX1247 **6**D. each or **6** for **2′6**

COILS FOR T1803 R.A.F. TRANSMITTERS

Master Oscillator Coils

These coils are constructed of 12g. silver plated copper wire 2½in. in diameter, rigidly mounted on four "Keramot" supports. The coil is mounted in a complete unit and the inductance is continuously variable from 2¼ to 12 turns by sliding contact. The dial indicates the number of complete turns in use, and also the portions of the last turn to one degree. The coupling coil is fitted with two tappings, and is fully adjustable from maximum to minimum coupling with a dial indicator showing the degree of coupling. Plugs ⅛in. diameter are fitted on the base of the assembly for plug-in purposes, if required. Two small fixed capacities are mounted on the unit-one air di-electric, and one mica, both of at least 1500 volt working.

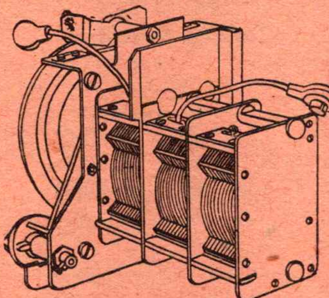
Amplifier Coils

Similar in construction to the Master Oscillator coils described above with the exception that there is no coupling coil and no mica capacitator. The diameter of the winding is 3in. and the inductance of the coil is continuously variable from 0-12 tappings.

Both coils described above are supplied complete in a wooden box measuring 9in. high, 6in. x 6in. with hinged lid.

Cat. No.		
AX1288—Amplifier Coil Range A	15,000-10,000 K.C.	3/11
AX1289—Amplifier Coil Range B	10,000-6,000 K.C.	3/11
AX1290—Master Oscillator Range B	10,000-6,000 K.C.	8/6
AX1293—Amplifier Coil Range C1	3,000-15,000 K.C.	3/11
AX1294—Master Oscillator Range C1	3,000-15,000 K.C.	8/6
AX1295—Amplifier Coil Range D	500-136 K.C.	8/6
AX1296—Master Oscillator Range D	500-136 K.C.	8/6
AX1297—Master Oscillator Range A	15,000-10,000 K.C.	8/6

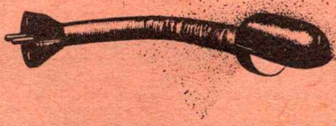
RECEIVER GANG & DIAL UNIT



Three-gang Tuning Condenser (192.5 MMFD MAX.) and Dial. Dial has, vernier drive with two "click stop" positions. Hand grip 2¼in. Knob. Suitable dial for any type of short wave receiver and lower power transmitter.

Cat. No. AX1008 .. .. .. **9′11**

The Light with Many Uses
THE "ANDY" LIGHT



This Unit consists of a insulated socket and plug collar, 3in. flexible Swan Neck and Torch Bulb type Lampholder.

Cat. No. AX1042 .. .. **2′11**

WAR SURPLUS BARGAINS!

Coils, removed from NEW ZC1 Army Transceivers. In perfect working order. Never used.

Short Wave Receiving Coils—Aerial

Wound on ½in. diam. former. 465 k.c. Iron Core. Fitted on to mounting terminal base. Lug connections. Shielded in can. Dimensions: 3in. high x 1½in. x 1½in., 4 to 8 M.C.

Cat. No. AX1003 .. **9**D. each

Oscillator Coils

Similar description to above mounted in can 2in. high x 1½in. x 1½in. Air Core.

Cat. No. AX1005 .. **1′6** each

R.F. Interstage Coils

Similar details to above Aerial coils.

Cat. No. AX1004 .. **1′6** each

B.F.O. Coils

For use with 465 I.F. Transformers and complete with .001 and .005 mfd. 5 per cent. Tolerance Mica Condensers. Shielded in can. Dimensions: 2in. high x 1½in. x 1½in.

Cat. No. AX1002 .. **2′-** each

P.A. Tank Coils

Unshielded Coils covering approximately 2 to 4 megs. (Low frequency) 40 Turns of 26 S.W.G. Enamelled Copper Wire Wound on 1in. former.

Cat. No. AX1034 .. **11½**D. each

Ditto. High Frequency. Covering approximately 4 to 8 megs. 18 Turns of 22 S.W.G. C. and E. Copper Wire.

Cat. No. AX1035 .. **11½**D. each

Driver Tuning Coils

Driver Tuning Coils. Constitute 103 turns of 7/46 S.W.G. Litz wire duolateral wound on ½in. former and tapped at 30 turns from start of winding. Mounted in metal can 3in. x 1½in. x 1½in.

Cat. No. AX1087 .. **2′6** each

Aerial Loading Coils

Wound on 4½in. long x 2in. diameter ribbed ebonite former.

Cat. No. AX1092 .. **1′6** each

Aerial Tuning Coils

Two windings on 5¾in. long x 2in. diameter former. First winding constitutes 60 Turns 22 S.W.G. Tinned Copper wire tapped every 6 turns. Second winding is 10 turns same wire tapped every turn. Spacing between two windings = ⅜in.

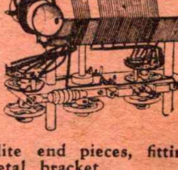
Cat. No. AX1249 .. **2′-** each

Master Oscillator Coils

Coverage 2.2 to 6.5 megs. Windings incorporate .00005 mfd. mica condenser and a 50,000 ohm. resistor. Mounted in can 3in. x 1½in. x 1½in.

Cat. No. AX1176 .. **2′6** each

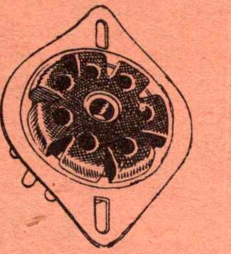
AERIAL TUNING UNITS



Tank Coil — Tuning Unit; Tank coil consisting of 75 turns double spaced tinned copper wire, 22 gauge; wound on a heavy former 2in. diameter and tapped by means of two single bank 11-position rotary selector switches. Coil and Switches mounted by means of 2 heavy bakelite end pieces, fitting on a cadmium-plated metal bracket.

Cat. No. AX1024 .. .. .. **6′11**

7-PIN SPEAKER PLUGS



"AMPHENOL"

American made 7-pin Speaker Plugs complete with detachable mounting flange measuring 1⅜in. between mounting holes.

Cat. No. AX1362

1/- each

WAR SURPLUS BARGAINS!

OCTAL WAFER VALVE SOCKETS

Eby Wafer Octal Valve Sockets to take all the modern types of tubes with the octal base. These sockets have the *mounting holes* spaced ¼in. further apart than the standard type but otherwise are exactly the same as the standard wafer socket selling at 8d.

GREAT BARGAIN!

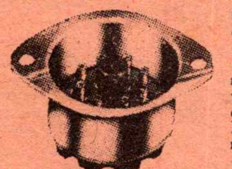
Cat. No. AS630—

4½D. each or **3/9** doz.

AMPHENOL OCTAL VALVE SOCKETS

These Sockets are the ring mounting variety and are new with the exception of being soldered.
Cat. No. AX1048 .. .. **4D.** each

SHIELDED OCTAL SOCKETS



Constitutes a standard Octal speaker plug mounted in a shell. A good recessed socket for wires carrying dangerous voltages. Impossible to touch male prongs. Overall diameter 1⅜in.

Neat and compact. For below surface mounting on all types of Radio apparatus including P.A. amplifiers, transmitters, electronic instruments, etc.
Cat. No. AX1230 .. .. **1/6** each

ENGLISH 5-PIN PLUGS

English 5-pin Chassis Mounting Plugs 5 prongs mounted on bakelite wafer base 1½in. x 1½in. with mounting holes at every corner.
Cat. No. AX1356 .. .. **9D.** each

ENGLISH 5-PIN SOCKETS

Wafer socket to take plug described below. Wafer socket 1½in. x 1½in.
Cat. No. AX1357 .. .. **9D.** each

ENGLISH 5-PIN CORD TYPE PLUGS

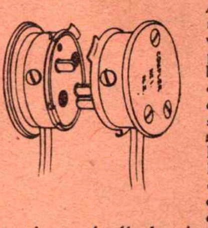
English 5-pin Plugs. Heavy bakelite two-piece plug—cord grip—fits into socket listed above (Cat. No. AX1357).
Cat. No. AX1358 .. .. **1/-** each

Five-pin sockets for fitting into cord to take above plugs.
Cat. No. AX1359 .. .. **9D.** each

LOCK NUTS

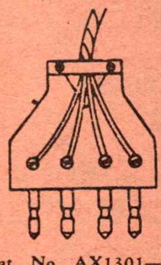
Hexagon Lock Nuts for Toggle Switches.
Cat. No. AX1211 .. .. **2D.** each

SURPLUS CORD CONNECTORS



A 2 piece 2-wire connector to serve a variety of uses. Heavy plastic moulded bodies plug into each other forming a strong coupling and giving a sure contact. Two ringclips enable both halves to be firmly locked together. Excellent as a lead coupler for caravans, extension speakers and extensions of all descriptions.
Cat. No. AX1083 .. .. **1/6** set

2-4 PRONG PLUGS



Heavy Bakelite Plugs. 4 prongs approx. 3-16in. diameter, with screw terminals. Recessed for cord entry with detachable moulded piece to clamp on to cord making a sure and safe connection.

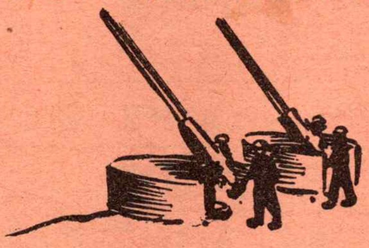
WORTH TWICE THE PRICE TO MANUFACTURE!

Cat. No. AX1185—

1/- each

Cat. No. AX1301—2 Prong Plug. Similar to above illustration but with only 2 outside prongs. .. .. **9D.** each

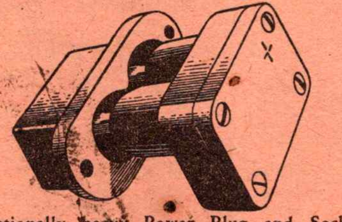
GREAT BARGAINS FROM WAR SURPLUS!



SOLENOIDS

Aircraft gun-trigger solenoids (new) 24 volts D.C. Magnavox, MK7, Model 1.
Cat. No. AX1382 .. .. **8/6** each

CHASSIS PLUG AND SOCKET



Exceptionally heavy Power Plug and Socket. Plug is chassis mounting; socket can be attached to cord. REALLY A BARGAIN AT
Cat. No. AX1060 .. .. **2/11** set

SWITCHES

These Switches have been removed from ZC1 Army Transceivers. All are brand new, although some may have solder marks.

S.P.S.T. TOGGLE SWITCHES

Standard type S.P.S.T. 230-volt 3 amp. Toggle Switch.
Cat. No. AX1020 .. .. **2/3** each

FLUSH MOUNTING SWITCHES

10 amp., 240 volt Flush Mounting Switches. Can be used for ordinary house lighting circuits or for any other purpose where an on-off switch is required.
Cat. No. AX1019 .. .. **1/6** each

PUSH-TO-TALK SWITCHES

D.P.D.T. Push Switch. Excellent for a meter push switch or for inter-communication work. Depth 3in., width ¾in.
Cat. No. AX1021 .. .. **2/-** each

WAVE CHANGE SWITCHES

3-Bank, 2-Position, 9-Pole Wave Change Switches as used in these Transceivers for Receiver/Band/C.W. Switch
Cat. No. AX1016 .. .. **4/6** each

2-Bank, 3-Position, 4-Pole Wave Change Switches as used for normal/net/remote switch.
Cat. No. AX1017 .. .. **3/-** each

3-Bank, 3-Position, 6-Pole Wave Change Switches.
Cat. No. AX1018 .. .. **4/6** each

PRESS BUTTONS

Ex Air Force aircraft. Strong push button mounted in plastic casing 2in. x 1¼in. x 1¼in. The button is recessed into the mounting. Ideal as cord grip bell push, or press-to-light switch.
Cat. No. AX1406 .. .. **1/-** each

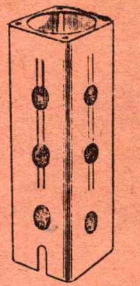
PENDANT PUSHES

Strong Plastic Cord Grip Pushes similar in action to a bell pear push. Originally used in conjunction with bomb release apparatus on aircraft. Diameter 1¼in. height 2in. Decisive push contact. Button is recessed inside protective outer casing. GREAT VALUE!
Cat. No. AX1381 .. .. **1/-** each

ON-OFF PLATES

Small nickelled plates for slipping over the threaded bush of a toggle switch. Marked ON-OFF. Gives a neat finish to flush mounting toggle switches.
Cat. No. AX1210 .. .. **3D.** each

VALVE SHIELDS



Cadmium plated Valve Shields for glass Octal based Tubes, 4½in. x 1½in. x 1½in. Complete with flush mounting base.

Cat. No. AX1052—

1/- complete

Similar Shield to above but made from heavy metal and reinforced.

Cat. No. AX1054—

1/3 complete

SMALL VALVE SHIELDS

Small cadmium plated Valve Shields measuring 3in. high and 1½in. square. Ideal for G.T. Tubes. Supplied complete with mounting base. ANOTHER BARGAIN!
Cat. No. AX1102 .. **6D.** each

BIG REDUCTION!

FIRMO-PLASTIC SOLUTION

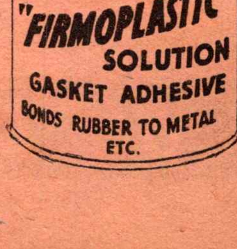
A general purpose solution used for bonding rubber to metal, or rubber to wood, concrete, slate, etc. Used extensively for cementing linoleums, rubber window trimmings in automobiles, flooring, etc.

PACKED IN ¼ PINT TINS

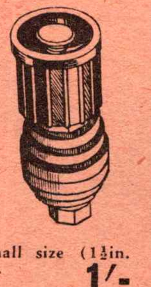
Because the s still have Army labels on them and the extra cost of canning would add to the price we are selling at well below the normal price (2s. 9d.).

ANOTHER GENUINE BARGAIN!

Cat. No. AX1254 .. .. **1/6** tin



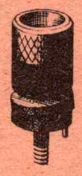
HEAVY DUTY INSULATED TERMINALS



These Terminals were used for Aerial connections on Transceivers and are an extremely robust and well-insulated job. Overall dimensions of terminal assembly 2¼in. high, ⅞in. diameter bakelite top. Heavy rubber insulating washers over steel stem.
Cat. No. AX1050— **1/3**

Similar to above but small size (1½in. x ⅞in. and not insulated.
Cat. No. AX1050A .. **1/-**

ALL-METAL TERMINALS



Non-insulated all-metal oxidised Radio Terminals Threaded headpiece & washer screwing down on to base washer makes for sure connection. 4BA x ⅜in. stem allows ample room for attaching insulated washers if terminal is required to be insulated.
Cat. No. AX1051 **6**D. each

HEAVY METAL TERMINALS

Heavy metal terminals nickel plated. Knurled nut screws down over wire giving a firm connection. Insulating washers, 3/32in. bolt complete with nut and solder lug. ½in. diameter; overall length 1¾in.
Cat. No. AX1315 .. .. **9**D. each

DOUBLE TERMINALS

8BA Brass Double Terminals. Centre stem is 1½in. in length and has on it three knurled nuts spaced with spiral washers and a set of nuts and washers for attaching to chassis. Ideal for crystal sets and small sets in general.
Cat. No. AX1402 .. .. **6**D. each

Cat. No. AX1401—Ditto but much longer size. Threaded stem is 3in. in length x 2BA. Three heavy knurled nuts (same principle as above) and mounting nuts. .. .. **1/-** each

PLASTIC TERMINAL TOPS

Black Plastic Tops ¾in. diameter as used on ZC1 terminals. Brass inset with ¼in. thread. Apart from their use with terminal assemblies these knobs will serve many other purposes such as feet for kettles, chassis stands, etc., etc.
Cat. No. AX1154 **4**D. each or **3/-** doz.

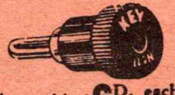
BATTERY TERMINAL KNOBS

Black plastic knobs 1in. diameter with knurled edge. These knobs do not use a grubscrew but are threaded inside the 5/16in. hole. Take a ¼in shaft comfortably. You can find many uses for these knobs at such a gift price!
Cat. No. AX1100 **2**D. each or **1/6**D. doz.

PLASTIC KNOBS

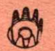
Black plastic knobs ¾in. diameter. Small brass insert to take ⅛in. rod. Fitted with grubscrew.
Cat. No. AX1143 .. .. **3**D. each

WANDER PLUGS



A heavy duty plug with a Plastic Top and a 3/16in. Metal Split Pin. Split pin could be spread out to fit sockets slightly larger.
Cat. No. AX1184 .. .. **6**D. each

SMALL CROWN EYELETS



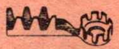
Approximately ¼in. in diameter with ⅛in centre hole. Protruding spikes around edge of eyelet fold over and make a firm sure connection.
Cat. No. AX1387 **9**D. dozen or **7/6** gross

RING LUGS

8BA Cable Lugs Nickel Plated. Crimping edge to take connecting wire.
Cat. No. AX1388 **6**D. dozen or **4/6** gross

Similar to above but larger 4BA and tinned
Cat. No. AX1389 .. .. **9**D. dozen

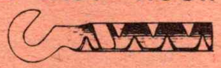
CABLE ENDS—CLAW TYPE



Brass claw type cable ends. Length 1⅛in. Round eyelet is ⅜in diameter with a ⅛in. hole in centre and has a crimped fold-over edge. Groove for cord 3/16in.
Cat. No. AX1394 **2**D. each or **1/6** dozen

Cat. No. AX1395—With ¼in. diameter eyelet and ⅛in. hole in centre.
2D. each or **1/6** dozen

CABLE ENDS—HOOK TYPE



Cadium-plated Cable Ends. Have hook end for fitting around terminal and teeth for crimping over and holding cable. Overall length 2in.

Cat. No.	Hook slot	For Cable up to (diam.)	
AX1393	3-16in. (2BA)	2MM.	**2**D. each
AX1396	3-16in. (2BA)	7MM.	**1/9** dozen
AX1397	3-16in. (2BA)	5MM.	
AX1398	5-32in. (4BA)	5MM.	

SMALL CABLE CLIPS

Strap ¼in. wide formed into 3/16in. circle with projecting bracket for mounting. Small and neat.
Cat. No. AX1419 .. .. **1**D. each

CABLE LUGS 5m.m.

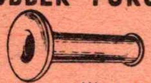
Nickel Plated Cable Lugs. 1in. in length, width of flange 5/16in., 3/16in. hole to take cord. Will fit terminals up to 3/16in. diameter.
Cat. No. AX1399 **2**D. each or **1/6** dozen

50 AMP. CABLE LUGS

Tinned 50 amp. Cable Lugs. Length 1½in. width of flange ⅝in., hole to take cable 5/16in. Will fit over terminals up to ¼in. diameter.
Cat. No. AX1407 .. .. **4**D. each

HARDWARE

RUBBER FURULE



Rubber Furule as illustrated. Useful as protection for wires passing through sets, chassis, etc., 1⅞in. long x ¾in. maximum diameter 3-16in. hole.
Cat. No. AX1204 .. .. **2**D. each

RIVETS

⅜in. x ⅛in. brass hollow.
Cat. No. AX1214 .. .. **2**D. doz.

3-16in. diam. x ⅛in. eyelet.
Cat. No. AX1216 .. .. **4**D. doz.

.14in. x .267in., Stimpson No. 78 brass eyelet.
Cat. No. AX1217 .. .. **4**D. doz.

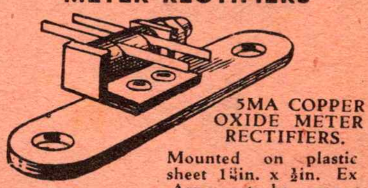
3-32in. x 3-32in. brass hollow; zinc plated.
Cat. No. AX1215 .. .. **2**D. doz.

WASHERS

Lock Washers, 3-64 x 1-32in. x 5G.
Cat. No. AX1229 .. .. **1**D. doz.

WAR BARGAINS!

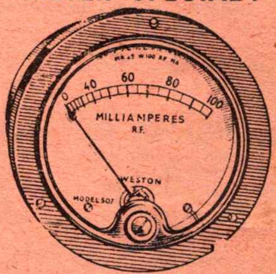
METER RECTIFIERS



5MA COPPER OXIDE METER RECTIFIERS.

Mounted on plastic sheet 1¼in. x ½in. Ex Army stocks, at a fraction of their true value.
Cat. No. AM45 .. **5/-** each

METER SPECIAL !



"Western" 0-100 M.A. 2½in. round R.F. thermo-coupled milliammeter. Flush mounting—plastic case.

GREAT VALUE!

Cat. No. AM23 .. .. **29/11** each

"Ferranti" 0-100 M.A., D.C., 2¼in. round meter with luminous dial.
Cat. No. AM22 .. .. **35/11** each

SPECIAL CHASSIS AND PANEL

Cadmium Plated Radio Chassis, taken from dismantled Army ZC1 Transceivers. Dimensions 20in. x 8½in. x 3in. deep; 22 Valve and Coil holes drilled. Space for Tuning Gang and Coil Assembly. Ideal chassis for a communications or a similar receiver.
Cat. No. AX1058 .. .. **7/9** each

RUBBER MOUTH PIECES

Rubber mouthpieces for ZCI Microphones.
Cat. No. AX1182 .. .. **3**D. each

VENT PLUG CAPS

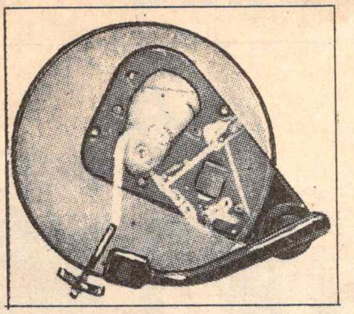
Heavy vulcanite screw in caps as used on automobile batteries to stop acid from spilling out, 1¼in. diam., with 1in. thread. Keep spares always handy for your battery.
Cat. No. AX1188— **6**D. each or **5/-** doz.

BARGAIN METERS

0-100 M.A. Moving Coil Milliammeters. These meters have been removed from brand new ZCI Transceivers and except for a few scratches are brand new.
Cat. No. AX1014 .. .. **22/6** each

VALUES IN SURPLUS WAR STOCKS

"GARRARD" RADIOGRAM UNITS



Model A.C.6

Consisting of an ELECTRIC GRAMOPHONE MOTOR with a Magnetic Pick-up mounted. On-off switch is incorporated in the tone arm and a variable speed regulator is attached to the frame. 230 volt A.C.; 10in. Turntable; Induction Motor. Just plug it into a light socket or power point, connect to your Radio and you play the music you like.

Cat. No. AP299 .. .. £6/4/6

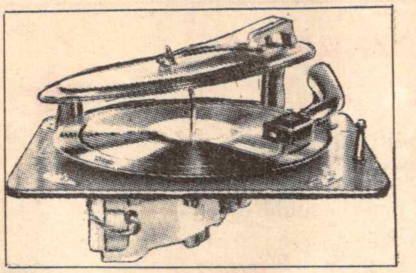
Model "S"

Similar in most ways to the A.C.6 described above but using a drum drive motor. Maintains a speed of 78 R.P.M. with ample torque to play the heaviest recordings. Automatic stop. Magnetic Pick-up. A simple, inexpensive unit maintaining the well known Garrard standard of quality and reliability.

NEW LOW COST!
Cat. No. AP298 .. .. £4/17/9

"GARRARD" AUTOMATIC RECORD CHANGERS

Model A.C.65



"GARRARD" Units and Changers are recognised throughout the world as the peak in Radiogram Units. The Electric Motor, Magnetic Pick-up and Automatic Record Changer combined (as illustrated) will take 8 records, either 10in. or 12 in., and play them through from start to finish without any attention whatsoever. Automatic devices lift tone arm from record when finished and place the next disc in position. Induction motor 230 volts A.C. Complete with full details.

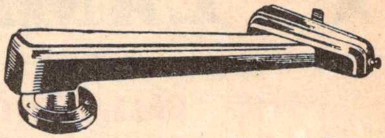
Cat. No. AP301 .. .. £15/1/3

Model R.C.70

Similar to the AC65 model described above but using the new Garrard Drum Drive Motor and maintaining a constant speed of 78 R.P.M. Plays up to 10 recordings either 10in. or 12in. Will not stack mixed recordings. No electrical interference when motor is running.

GREAT VALUE!
Cat. No. AP302 .. .. £9/16/9

"ACOS" CRYSTAL PICK-UPS



Another top line Cosmocord Crystal Pick-up. Gives crystal clear reproduction to all recordings. Play the records you like when you like, through your own radio by using the "Acos." Crystal cartridge is fitted in a streamlined plastic arm. Needle pressure 35 gms. English manufacture.

NEW LOW PRICE!
Cat. No. AP308 .. .. .. 44/-

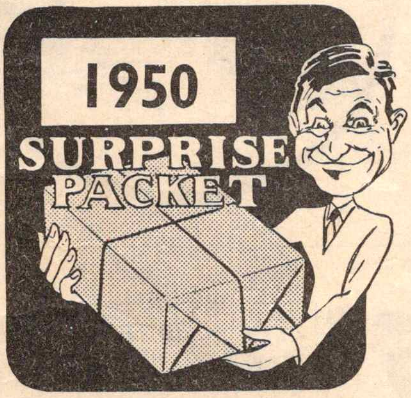
Cat. No. AP335—Spare Crystals for above .. .. .. 18/6 ea.

PICK-UP NEEDLES

"Songster" brand Bronze Pick-up Needles. Play approximately 8 records per needle. Packed in tins of 100.

Cat. No. AP330 .. .. 1/8 tin

BUNDLE OF BARGAINS!!



You get value at its best when you purchase your "1950 SURPRISE PACKET"—a package of all sorts of Radio and Electrical "odds and ends," new and used components of all descriptions.

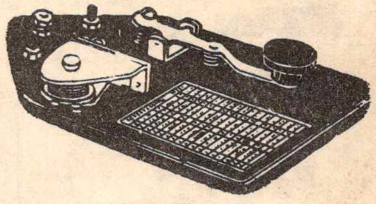
Trust us with 5/- and if you are not more than satisfied we will refund your money.

THERE'S ONLY ONE JUDGE—
YOURSELF!
TRY IT AT OUR RISK!

Order Your "1950
SURPRISE PACKET"
NOW! 5/-

BIG BARGAIN!

MORSE PRACTICE SETS

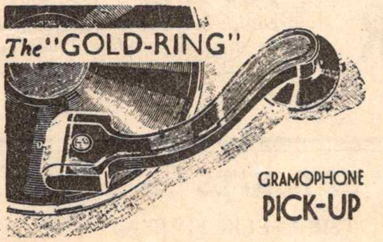


British-made Morse Practice Set, has Morse Code embossed on base. Stroke of key can be adjusted to individual requirements. Terminals are provided so that the Set can be used in conjunction with another set. Containing Key and Buzzer on One Base. Light Pattern. Measurements 4⅜in. long, 2⅜i. wide, 1⅛in. high.

Cat. No. AH110—Only 5/11 ea.

BIG BARGAINS IN MORSE KEYS

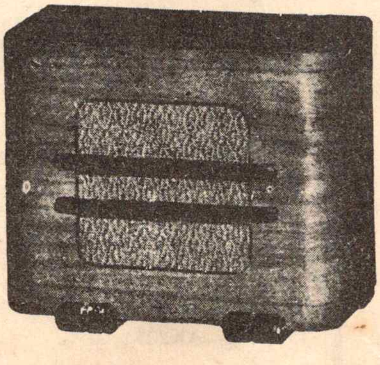
MUSIC HOW YOU LIKE IT!



Arrange your own programmes and have "music as you like it" with a "GOLD-RING" Magnetic Pick-up—The Pick-up that gives Studio-like reproduction to all recordings. Can be connected to practically every make of multi-valve Radio and attached to either a hand-wound or Electric type Gramophone Motor.

Cat. No. AP306 .. .. .. 35/-

VICTORIA SPEAKER CABINETS

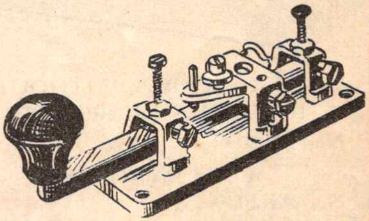


Well-finished veneered Speaker Cabinet for extension speakers, etc. Measurements: 11¾in. wide, 9½in. high, 6⅝in. deep. Provided with baffle for 8in. Speaker.

Cat. No. AC183 .. .. 42/6 ea.

War Special!

ARMY KEYS



This key is very compactly constructed on a bakelite base measuring 3⅜in. x 1⅝in. Very efficient for sending Morse at a high speed, and is complete with fine adjusting screw. As used by the Army and other services.

WORTH 30/- . . . BUT NOW
Cat. No. AX1075A— 5/11

KITS for Radio TRAINING

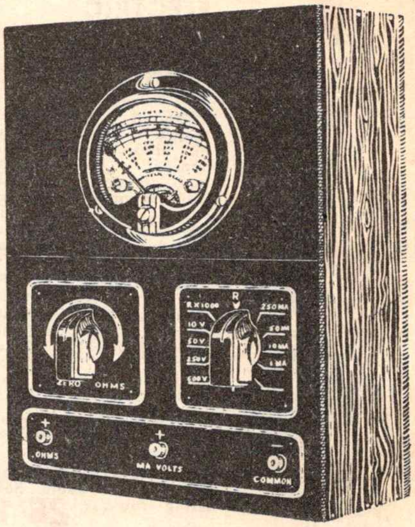
THE "10-RANGE METER"

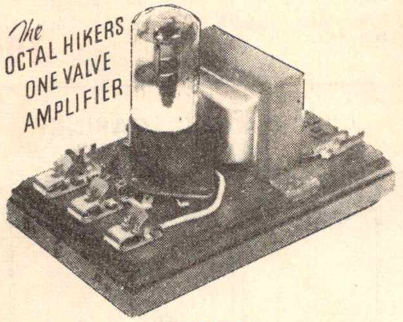
AN EXCELLENT PIECE OF TEST EQUIPMENT
FOR THE RADIO ENTHUSIAST.

A simple, inexpensive to build meter kit covering 10 ranges and giving reasonably accurate readings.

COMPLETE KIT OF PARTS

Cat. No. AK2041 .. .. **£5/12/6**





THE "OCTAL HIKERS" AMPLIFIER

An excellent single-valve amplifier using a 1.4-volt octal tube for amplifying crystal sets or small one-valve receivers such as the "Hiker's One."

Cat. No. AK2010 .. .. **45/-**

THE "EASY-BUILT" CLIPPER PORTABLE

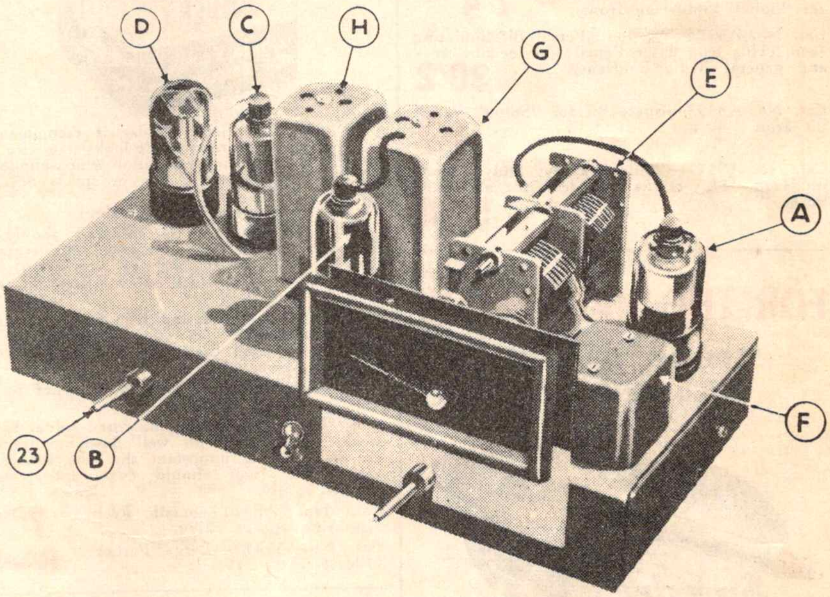
An ideal circuit for those wishing to build a portable set to take with them on their vacation as well as for use at weekend outings, tennis parties, tramping-motoring trips, etc. Four modern 1.4-volt valves give maximum operating efficiency as well as being a great little economiser as far as the battery drain is concerned.

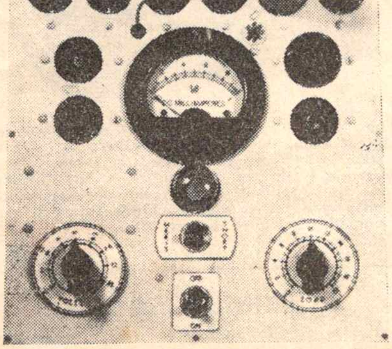
COMPLETE KIT OF PARTS WITH
SPEAKER WITHOUT BATTERIES

Cat. No. AK2040 .. .. **£9/19/6**

COMPLETE KIT OF PARTS
WITH BATTERIES

Cat. No. AK2040A .. **£11/16/6**





THE "SIMPLEX" UNIVERSAL VALVE TESTER

A simply designed, versatile valve tester that will test the majority of valves available on the New Zealand market.

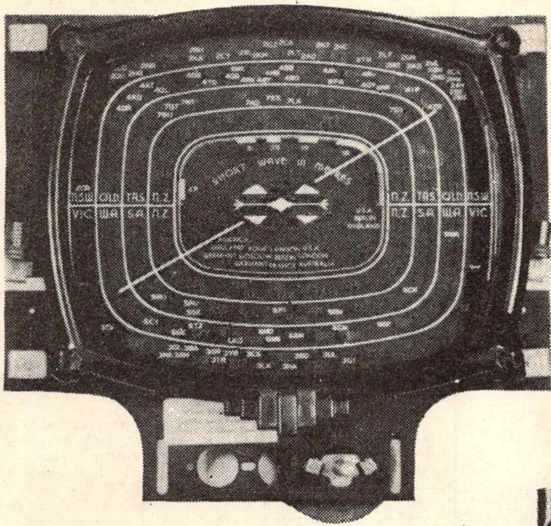
COMPLETE KIT OF PARTS

Cat. No. AK2032 .. .. **£7/17/6**

LAMPHOUSE
Kitsets are only designed on Proven and Tested Circuits.
Buy with Confidence
from
"LAMPHOUSE."

PROSPECTIVE BUYER — ALL GOODS LISTED IN THIS CATALOGUE ARE COVERED BY OUR 7 DAY MONEY-BACK GUARANTEE

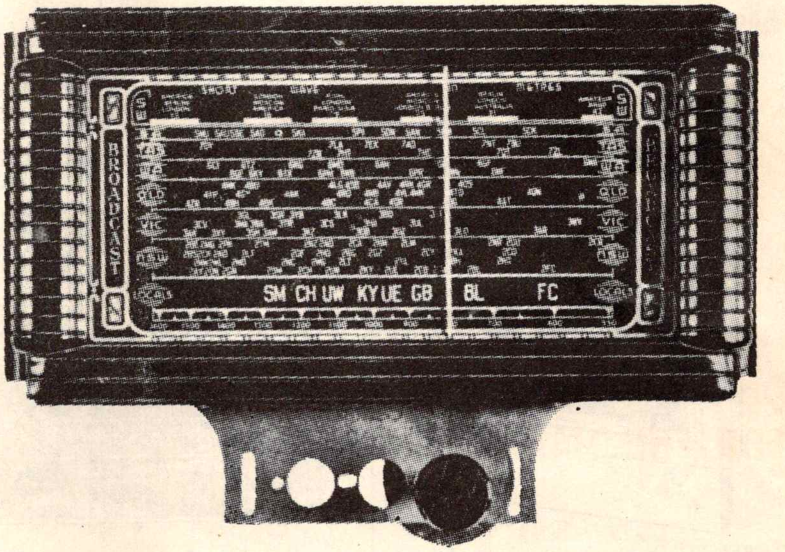
★ BIG DIAL VALUES! ★



Three high quality Dials, designed by Australia's leading Dial manufacturers for those who want a first-class article at a reasonable price. All are calibrated for New Zealand, Australian and Shortwave Stations and matched to the Plessey type "K" 3-gang condenser (440 mmfd.) Dial Shaft, 3/8in.

A popular size for 5 or 6 valvers. Attractive colour toning. Glass scale is mounted against a black background. Station markings are in Green and Orange with Ivory trimmings. Fancy brown mottled Escutcheons, two Dial Lightholders for edge lighting. Maximum measurements for Visual Dial face. Length, 8in.; Depth, 6½in. Overall dimensions of frame: Length, 10in.; Depth, 9¼in.

Cat. No. AD120—NEW LOW PRICE 49/11



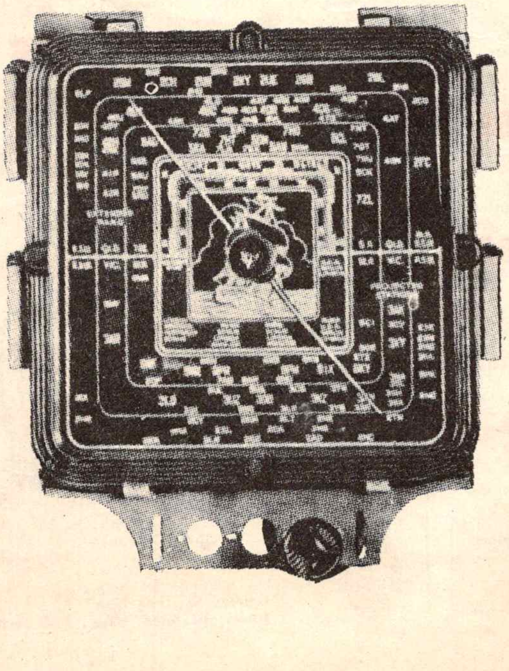
A BEAUTIFULLY MANUFACTURED DIAL WITH A LINED, MOTTLED BROWN PLASTIC ESCUTCHEON.

Glass scale is mounted against a brown background and coloured as follows:—Orange, designing colour; White and Yellow, station markings.

2 Dial Light Holders for Edge Lighting are mounted.

Visual Dial face measures: Length, 10in.; Depth, 5in. Overall Dimensions of Frame: Length, 12in. Depth, 8in.

Cat. No. AD122—
NEW LOW PRICE 64/11



A DE LUXE SPECIAL FOR A CONSOLE CABINET

ITS SIZE WOULD MAKE IT AN ADMIRABLE DESIGN FOR THE LARGER CLASS OF RADIO

Visual Dial face measures 8in. x 8in. Overall dimensions are: Length, 10½in.; Depth, 11½in.

Colour scheme is as follows: Background—Black. Station markings—Green, Orange and Ivory. Trimmings in Orange and Ivory.

Grooved brown mottled bakelite Escutcheon. Space for Four Dial Lights.

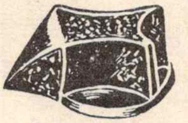
Cat. No. AD121—NEW LOW PRICE 64/11

OUR GUARANTEE

Any goods that prove in any way unsuitable may be returned undamaged within seven days from receipt and your money will be refunded in full.

DIAL ACCESSORIES — KNOBS

BIG VALUE! IN POINTER KNOBS

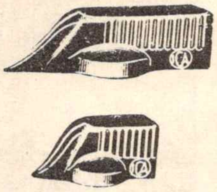


Small Pointer Knobs. Black bakelite indicator type Knobs. Hole for ¼in. shaft. Brass inset.

Cat. No. AD66—Small Pointer.

9D. each

BAKELITE POINTER KNOBS



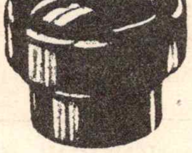
Ideal knobs for test equipment, all types of transceivers, and electrical and radio test equipment. Hole for ¼in. diam. shafts. Black finish with engraved white line through centre of pointer.

Cat. No. AD68—2¼in. .. .. **1/9 each**

Cat. No. AD67—1¼in. .. .. **9D. each**

FANCY BROWN PLASTIC KNOBS

The Knobs illustrated are neat designs on plastic, with hole for ¼in. shaft. Best make, with brass insert.



Round Knob, 1in. diam., walnut finish.

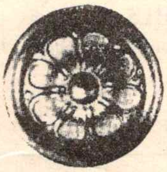
Cat. No. AD72—

1/2 each

Similar Knob, smaller diameter.

Cat. No. AD73—

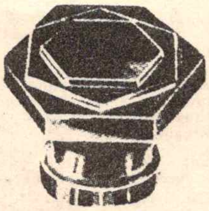
1/1 each



Floral Knob, mahogany colour.

Cat. No. AD71—

1/- each



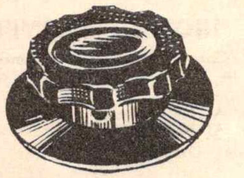
HEXAGONAL SHAPE KNOB

Walnut finish.

Cat. No. AD70—

11D.

INSTRUMENT KNOB



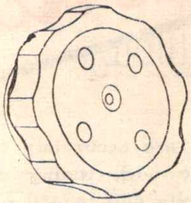
Black Moulded Instrument Knob, fits ¼in. shaft. Metal inset. (Knobs are slightly damaged.) Fixed by grub screw. Diam. 2in.

Cat. No. AD40 .. .. **2/9 each**

Knob similar to above but without flange.

Cat. No. AD41 .. .. **2/6 each**

SURPLUS INSTRUMENT KNOBS

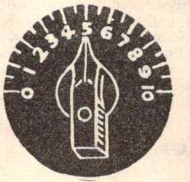


Black Handgrip Bakelite Instrument Knobs as used with Army Equipment during wartime. Has ¼in. brass insert in centre but has no grub screw. 4 other brass inserts ⅛in. tapped with thread also on rear of knob allow for firm attachment to a metal or plastic disc. BULK BUYING ENABLES US TO PASS THESE ON TO YOU AT

Cat. No. AX1107—

6D. each or 5/6 doz.

DIAL PLATE



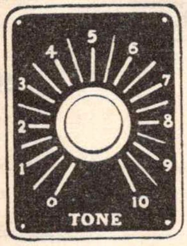
Indicator Plates, engraved from 0 to 10 degrees. Diameter 1¾in., hole ¼in.

Cat. No. AD30 **2/3**

(Suitable Pointer Knobs are—Cat. No. AD67—9d. each.)

OVERSTOCKED!

OBLONG INDICATOR PLATES



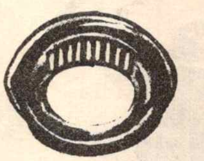
Metal indicator Plates marked 0—10 with 20 divisions. Size 1⅝in. x 2¼in. Background black with all markings in white. These plates are normally priced at 2s. each but because we are at present overstocked—down comes the price.

Cat. No. AD33—

NOW **1/- each**

(Suitable Pointer Knobs are Cat. No. AD66, 9d. each.)

"MARQUIS" MAGIC EYE ESCUTCHEON

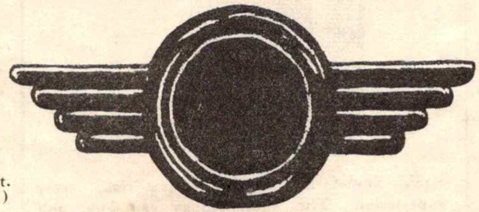


Moulded in brown plastic. Neat design. Fit into 1¼in. diam. hole. Give that finished look to your set.

Cat. No. AS507—

9D. each

MAGIC EYE ESCUTCHEONS

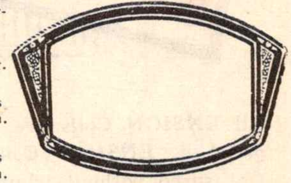


Moulded in beautifully finished plastic it will finish off any radio cabinet. Made for use with "Magic Eye" Tuning Indicator. Size overall 4¼in. x 1⅞in.

Cat. No. AS506 .. .. .. **9D. each**

Forty-Niner Special!

DIAL ESCUTCHEONS



Prices slashed as an Anniversary special

Oval shape. Black plastic.

Outside measurements 8¾in. x 7½in.

Inside measurements 6½in. x 5¼in.

Cat. No. AD200 .. *NOW* **11½D. each**

Glasses for above. Cat. No. AD201 **1/- ea.**

OCTAGONAL ESCUTCHEONS

Square Brown Bakelite type, with Octagonal opening. Overall dimensions: 4¾in. x 4¾in. Opening is 3½in.

Cat. No. AD218 .. .. **11½D. each**

KNOB FELTS

Felt Circles, for fitting between control knobs and cabinet of Radio Sets. Outside diameter ⅞in. with ¼in hole.

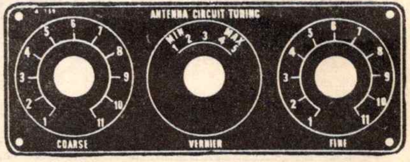
Cat. No. AD25 .. .. .. **1D. each**

DIAL CORD

Glazed Cord, suitable for dial restringing.

Cat. No. AD26 .. .. .. **2D. yard**

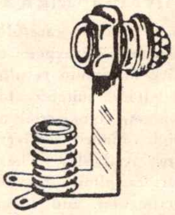
TUNING SCALE PLATES



Tuning Scale Plates, 6in. x 2¼in. Brown plate with white markings. ⅝in. Control holes.

Cat. No. AD34 .. .. .. **1/- each**

PILOT LIGHT BRACKET

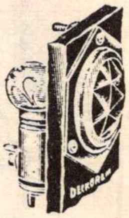


Red ruby jewel. Two lugs insulated from bracket. Jewel fits into 7/16in. panel hole.

Cat. No. AD500—

2/9 each

RUBY WINDOW BRACKET FITTING



An inexpensive accessory, comprising nickel-plated bezel with ruby lens and bulb-holder. Fixed by 3 screws provided. Takes all M.E.S. bulbs.

Cat. No. AD501 **5/6 each**

FREIGHT

We pay Freight on all retail orders over £1 value. Please include sufficient cash for postage on small orders.

COILS, COIL FORMERS, ETC.

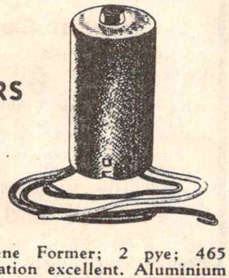
"ENSIGN" UNIVERSAL REPLACEMENT COILS

Universal replacement coils adjustable in inductance to suit gang condenser capacities from 360 to 480 mmfd. Will replace existing coil. Unshielded.

Cat. No. AC330—Aerial Type ..	7/11
Cat. No. AC331—R.F. Type	7/11
Cat. No. AC332—Oscillator Type ..	7/9

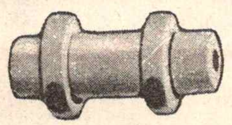
FULL DETAILS WITH EACH COIL.

MIDGET I.F. TRANSFORMERS



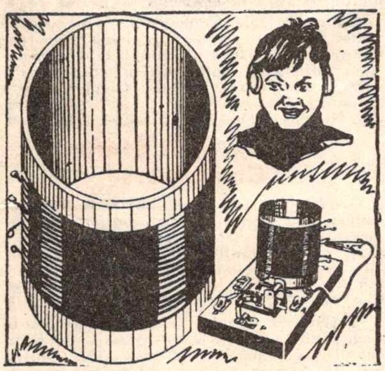
Measuring only 2in. high x 1⅛in. diameter, the "Ensign" Midget I.F. is ideal for the miniature portable receiver. Permeability tuned. Wound on Polystyrene Former; 2 pye; 465 k.c. Noise to signal ration excellent. Aluminium can.
Cat. No. AC524 .. .. **15/6** each

"ECONOMY" I.F. BOBBINS



Cat. No. AC527—465 K.C. Air Core **4/6**

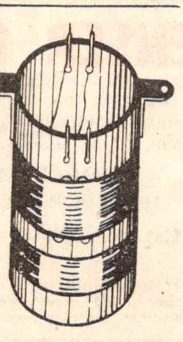
CRYSTAL SET COILS



Coils for Crystal Sets. Consist of 70 turns, 24-gauge D.C.C. Wire on 3in. diam. bakelite former. Tapped every tenth turn.
Cat. No. AC266 .. .. .. **4/-** each

T.R.F. COILS

These Coils have been developed for constructors wanting low-priced yet well-made T.R.F. Coils. Wound with enamelled wire on bakelite former 1½in. diam.



Cat. No.
AC530—Aerial **3/3**
AC531—R.F. **3/3**
AC532—R.F. With Reaction. **3/9**

HIKER'S ONE COILS

Ready wound coils for the famous Hiker's One sets. Wound on Coil Former 1¾in. diam. x 3¼in.
Cat. No. AC535 .. .. **3/9** each

WAR SURPLUS BARGAINS!

I.F. Transformers and Coils, removed from NEW ZC1 Army Transceivers. In perfect working order. Never used.

I.F. TRANSFORMERS

Best I.F.S. ever made. Made under strict supervision. 465 k.c. Iron Core Type. In cans, complete with slug type Trimmers. Dimensions of can: 3½in. high x 1½in. x 1½in.
Cat. No. AX1006—1st I.F. **7/11** ea.
Cat. No. AX1007—2nd I.F. **7/11** ea.

SHORT WAVE RECEIVING COILS — AERIAL

Wound on ½in. diam. former. 465 k.c. Iron Core. Fitted on to mounting terminal base. Lug connections. Shielded in can. Dimensions: 3in. high x 1½in. x 1½in. 4 to 8 M.C.
Cat. No. AX1003 . **9D.** each

OSCILLATOR COILS

Similar description to above mounted in can 2in. high x 1½in. x 1½in. Air Core.
Cat. No. AX1005 .. **1/6** each

R.F. INTERSTAGE COILS

Similar details to above Aerial coils.
Cat. No. AX1004 .. **1/6** each

B.F.O. COILS

For use with 465 I.F. Transformers and complete with .001 and .005 mfd. 5 per cent. Tolerance Mica Condensers. Shielded in can. Dimensions: 2in. high x 1½in. x 1½in.
Cat. No. AX1002 .. **3/6** each

P.A. TANK COILS

Unshielded Coils covering approximately 2 to 4 megs. (Low frequency) 40 Turns of 26 S.W.G. Enamelled Copper Wire. Wound on 1in. former.
Cat. No. AX1034 .. **11½D.** each

Ditto. High Frequency. Covering approximately 4 to 8 megs. 18 Turns of 22 S.W.G. C. and E. Copper Wire.
Cat. No. AX1035 .. **11½D.** each

DRIVER TUNING COILS

Driver Tuning Coils. Constitute 103 turns of 7/46 S.W.G. Litz wire duolateral wound on ½in. former and tapped at 30 turns from start of winding. Mounted in metal can 3in. x 1½in. x 1½in.
Cat. No. AX1087 .. **2/6** each

AERIAL LOADING COILS

Wound on 4½in. long x 2in. diameter ribbed ebonite former.
Cat. No. AX1092 .. **1/6** each

AERIAL TUNING COILS

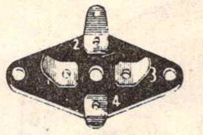
Two windings on 5¼in. long x 2in. diameter former. First winding constitutes 60 Turns 22 S.W.G. Tinned Copper wire tapped every 6 turns. Second winding is 10 turns same wire tapped every turn. Spacing between two windings = ⅜in.
Cat. No. AX1249 .. **2/-** each

MASTER OSCILLATOR COILS

Coverage 2.2 to 6.5 megs. Windings incorporate .00005 mfd. mica condenser and a 50,000 ohm. resistor. Mounted in can 3in. x 1½in. x 1½in.
Cat. No. AX1176 .. **2/6** each

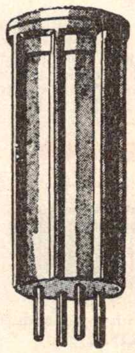
BULK PURCHASE!

BAKELITE COIL BASES



Used for finishing Coil Windings and for connecting to the wiring of the Set. Provided with 4 lug Terminals mounted on bakelite strip. Mounting holes 1½in. apart. Bulk purchase enables to sell these at a fraction of their true cost!
Cat. No. AC529— **2D.** each **1/3** doz.

"PLUG-IN" COIL FORMERS



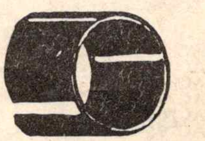
Coil Formers for winding short-wave plug-in coils. Eight-ribbed bakelite. Well made. 1¼in. diameter.

Cat. No. AF55 — 4-pin Plug-in-Former **2/9** ea.

Cat. No. AF56 — 5-pin Plug-in-Former **2/9** ea.

Cat. No. AF57 — 6-pin Plug-in-Former **2/9** ea.

"COIL FORMER"



This Former Tube for coil winding has very high insulating properties, the surface being made of pure bakelite.

Cat. No.	Each
AF78—½in. dia., 6in. lengths ..	1/–
AF80—1in. dia., 6in. lengths ..	1/3
AF81—1¼in. dia., 6in. lengths ..	1/10
AF81A—1¼in. dia., 3in. lengths ..	1/–
AF83—1½in. dia., 6in. lengths (valve base size) ..	2/3
AF86—2in. dia., 6in. lengths ..	2/3
AF87—2½in. dia., 6in. lengths ..	2/4
TF88— 3in. dia., 5in. lengths ..	2/1

WAR SURPLUS

PAPER TUBING

3/8in. Outside Diameter, 2ft. lengths.
Cat. No. AX1207 .. **2/-** piece

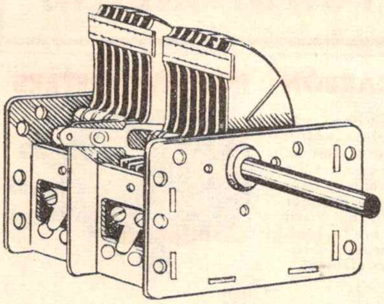
ENSIGN COILS

Colour Code

AERIAL & R.F.	
Grid	Green
Plate or Aerial ..	Yellow
Earth or B + ...	Red
Earth or A.V.C. ..	Black
OSCILLATOR	
Grid	Green
Plate	Yellow
B + ...	Red
Padder	Black
INTERMEDIATE FREQUENCY TRANSFORMERS	
Plate	Blue
B + ...	Red
Grid or Diode Plate ..	Green
A.V.C. or Diode Load ..	Black

VARIABLE CONDENSERS

GANGED CONDENSERS



British-made reliable Condensers will match up with Ensign Coil Kits. ⅜in. shafts, anti-clockwise rotation. Capacity .00042.

Cat. No. AC922—2-gang **13/-**

Cat. No. AC923—3-gang **18/6**

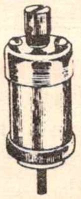
INTERFERENCE SUPPRESSION CONDENSERS

Specially constructed Condensers to alleviate radio interference set up by electrical units such as motors, etc. Fits direct to the motor or other such unit.

Cat. No. AC595—Tubular Pack. .1 mfd. + .1mfd. + .01 mfd. 250 volt A.C. . . **5/6**

Cat. No. AC596—Oblong Metal Can. 1⅝in. x 1⅜in. with mounting bracket. .01 mfd. + .01 mfd. + .02 mfd. 250 volt A.C. **5/6**

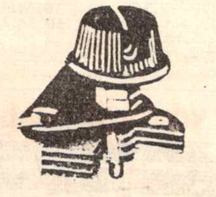
MEISSNER TRIMMERS



High-quality trimmer. Type 50, mounted on high dielectric porcelain base and completely shielded in brass can. Capacity 25MMFD. Dimensions: 1⅞in. high by ¾in. diameter. Normally worth 4/6 each, but because they are war surplus offered at 2/- each.

Cat. No. AC865 . . . . **2/-** each

TRIMMING CONDENSER



Air-spaced trimming condenser, ¼in. shaft; capacity 35MMFD. Knob is not supplied with condenser.

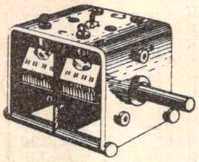
Cat. No. AC807 . . . . **6/6** each

WAVEMASTER CONDENSERS

Double-spaced plates, high frequency insulation. Single-end bearing with provision for ganging. Max. cap. 8MMFD; min. cap. 1MMFD. 3 plates, spacing .15in.

Cat. No. AC835 . . . . **7/6** each

"ENSIGN" MIDGET CONDENSERS



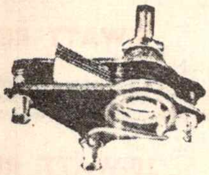
Ideal Gang Condensers for miniature portables, etc. Overall dimensions only, Height 1⅝in., Width 1½in., Depth 1⅞in.; 1 gang section ⅞in. Capacity, .000365 max., 14 p.f.d. min. Ceramic insulation. Nickel silver contacts.

Cat. No. AC924—2 gang **18/6**

Cat. No. AC925—3 gang **19/9**

MIDGET VARIABLE CONDENSERS

Very compact Condensers for constructing small receivers, wave traps, and other apparatus.



Solid dielectric type. ¼in. diam. shaft. Overall dimensions, 1¾in. x 1¼in. x ¾in. thick. Shaft assembly 1in. long.

AC918, .0003— **5/3**

Cat. No. AC919—.0005 . . . . **5/3**

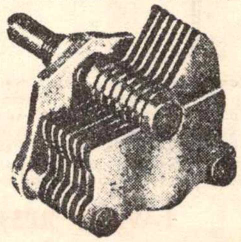
Cat. No. AC917—.0001 . . **5/3** each

MIDGET CONDENSERS, R.C.S.

Midget Condensers with high voltage trolitul insulation end pieces, single bearing type.

Cat. No.	Max. Cap.	Min.Cap.	Plates.	Price
AC809	Mmfd.10	Mmfd.3	3	5/-
AC810	Mmfd.25	Mmfd.3.5	4	5/4
AC811	Mmfd.50	Mmfd.4	7	6/3
AC812	Mmfd.100	Mmfd.6	14	7/9

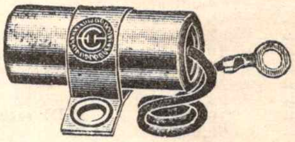
R.C.S. MIDGET CONDENSERS



Trolitul high voltage insulation end pieces and double bearing, suitable for ganging.

Cat. No.	Max. Cap.	Min.Cap.	Plates.	Price
AC814	Mmfd.10	Mmfd.3	2	6/6
AC815	Mmfd.25	Mmfd.3.5	4	6/6
AC816	Mmfd.50	Mmfd.4	7	7/6
AC817	Mmfd.100	Mmfd.6	14	8/11

GENERATOR CONDENSERS



Special Condensers for noise suppression on motor car radio intallations, etc. .5mfd. Metal case.

Cat. No. AC657 . . . . **4/10** each

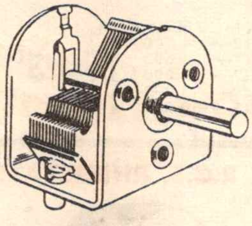
"Wavemaster" Transmitting Condenser

A reasonably priced condenser having both single bearing mounting and rigidity of construction. Plate spacing (.150in.) enables this condenser to be used for a variety of purposes in medium power transmitters. It is admirably suited for ganging, resulting in a popularly priced split stator condenser. Available in one size only (3-50 mmfd.) 13 plate, ¼in. shaft, ½in. Mounting Hole. Measures 2in. wide, 1½in. high and projects 2¼in. behind panel.

PRICE

Cat. No. AC841 . . . . **9/10** each

TUNING CONDENSERS



Single gang for crystal sets, Hiker's One, wave-traps, small valve sets, etc., etc. Small size make them ideal for portables, etc. Panel mounting. Size 1¾in. x 1½in. x 1¾in. high; shaft ¾in. long.

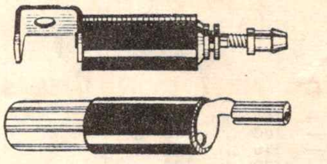
Cat. No. AC905—.0003 . . . . **6/3**

Cat. No. AC906—.0005 . . . . **6/3**

LAMPHOUSE GUARANTEE

Any goods that prove in any way unsuitable may be returned undamaged within seven days from receipt and your money will be refunded in full.

MOTOR RADIO SUPRESSORS



Spark Plug Type (top illustration). A sturdy unit which meets the most exacting demands for spark plug suppression.

Cat No. AR229 . . . . . . **1/8**

Distributor Type—Cat. No. AR228 **1/11**

The above suppressors will not affect power or petrol consumption of your engine.

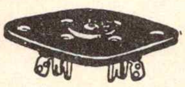
1/- — 6-VOLT LAMPS — 1/-

Six-volt 17 c.p. Lamp, standard bayonet base. These were originally motor-car lamps, but bases were converted during the war to standard size. Because they look a little rough we offer them at 1/- each. Ideal for camp, caravans, etc., etc.

Cat. No. AL489 . . . . **1/-** each

VALVE SOCKETS

WAFER SOCKETS



Ruggedly constructed. Certain connection with three points contacting each of the valve pins. Standard mounting centres.

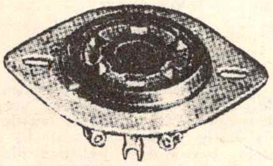
Cat. No. AS631—4-pin ..
Cat. No. AS632—5-pin ..
Cat. No. AS633—6-pin ..
Cat. No. AS634—7-pin ..
Cat. No. AS635—8-pin (Octal)
ALL 7D. EACH

Cat. No. AS636—Loctal 1/-

Cat. No. AS637 — Sockets for Midget Valves (1S4 series) .. 1/3 each

English 5-pin Special Wafer Sockets (for PM22A Valves). Cat. No. AS602 .. 3/9

AMPHENOL VALVE SOCKETS



Amphenol Valve Sockets, complete with metal mounting plates

Cat. No. AS614—4-pin .. ..
Cat. No. AS615—5-pin .. ..
Cat. No. AS616—6-pin .. ..
Cat. No. AS617—7-pin .. ..
Cat. No. AS618—7-pin Large ..
Cat. No. AS619—8-pin .. ..
ALL 10D. EACH

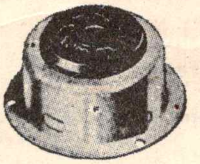
Cat. No. AS619A—8-pin Clip Mounting Type, without Flange .. .. .. 8D. each

MOUNTING FLANGES FOR AMPHENOL VALVE SOCKETS

Metal Mounting plate similar to that illustrated on Amphenol socket above. Converts ring mounting socket to flange type.

Cat. No. AS612 .. .. .. 4D. each

BASEBOARD MOUNTING VALVE SOCKETS



Amphenol Sockets mounted on raised metal shield to enable the sockets to be screwed on wooden baseboards, etc.

Cat. No. AS620—4-pin ..
Cat. No. AS621—5-pin ..
Cat. No. AS624—8-pin Octal
2/3 each

WAR SURPLUS BARGAINS!

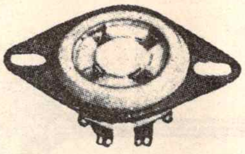
OCTAL WAFER VALVE SOCKETS

Eby Wafer Octal Valve Sockets to take all the modern types of tubes with the octal base. These sockets have the *mounting holes* spaced ¾in. further apart than the standard type but otherwise are exactly the same as the standard wafer socket selling at 8d.

GREAT BARGAIN!

Cat. No. AS630—
4½D. each or 3/9 doz

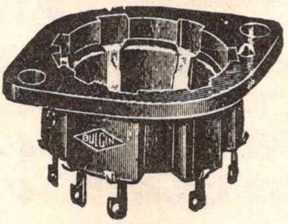
"STEATITE SOCKETS"



Made from entirely new dielectric, ultra low loss. Phosphor bronze silver-plated contacts Steatite Sockets are particularly recommended for high frequency work and where high temperatures are encountered. Ideal for Transmitters and Amplifiers and other apparatus in excess of 20 watts.

Cat. No. AS641—4-pin ..
Cat. No. AS642—5-pin ..
Cat. No. AS643—6-pin ..
Cat. No. AS644—7-pin ..
Cat. No. AS645—8-pin ..
ALL 5/- EACH

SIDE-CONTACT CHASSIS VALVE-HOLDERS.



8-CONTACT.

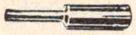
Moulded bakelite chassis valve holders for the side-contact valves. Fitted with eight leaf contacts and integral solder tags. Very efficient and reliable contact is made with valves of the type concerned.

Cat. No. AS601 .. .. .. 1/7

RIMLOCK SOCKETS

Philips Rimlock type valve sockets.—Cat. No. AS600 .. 1/5 each

SPEAKER CORD TIPS



Nickel-plated tips for speaker and 'phone cords. Cat. No. AT28 .. .. 2D. each

DE-LUXE CORD TIPS

A nickel plated, stepped phone or speaker tip. Finished article.

Cat. No. AT26 .. .. .. 6D. each

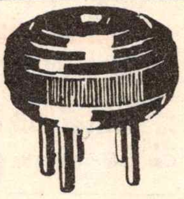
PRICES ARE SUBJECT TO ALTERATION

All Prices in this book must be regarded as an indication only—all orders will be executed at ruling prices.

THE ELECTRIC LAMP HOUSE LIMITED
11 MANNERS STREET,
WELLINGTON, C.1.

PLUGS—JACKS

SPEAKER PLUGS



For use with Speakers, Battery Cables, etc. Metal top clips on to a bakelite base. Deep metal casing enables plug to be removed easily from socket and also allows good space for internal wiring.

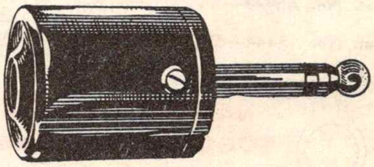
Cat. No. AP240—4-pin .. 1/- each
Cat. No. AP242—5-pin .. 1/- each
Cat. No. AP248—8-pin .. 1/- each

Black Bakelite Amphenol Type.

Cat. No. AP244—6-pin .. 1/- each
Cat. No. AP246—7-pin .. 10d. each

BIG REDUCTION!

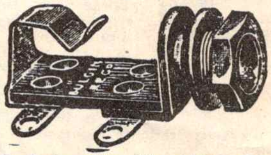
PHONE PLUGS



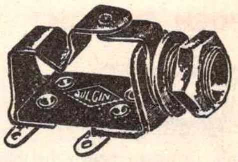
A Jack Plug with strong brass contacts, Heavy black bakelite moulding.

Cat. No. AP269 WERE 4/6 NOW 2/-

JACKS



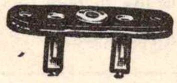
Bulgin S.C. Jacks—Cat. No. AJ22 1/8 each



Bulgin Single Closed Circuit Jacks.

Cat. No. AJ23— 2/4 each

TWIN TIP JACK UNITS



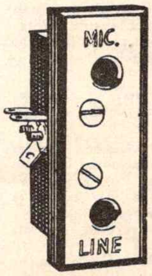
A strong spring firmly makes contact to any tip inserted within its grip. Mounted on bakelite strip. Metal parts are nickelplated.

Jacks fit any standard 'phone tip.

Cat. No. AJ8 .. .. .. 6D. each

SURPLUS WAR STOCKS

Jacks



Single Key Jacks (S.C.), Single-pole double-contact insulated jack mounted on 2¼in. x ¾in. bakelite panel.

Cat. No. AX1038— 1/- each

Double Phone Jacks (D.C.) mounted on 2¼ in. x ¾in. panel.

Cat. No. AX1039— 1/6 each

Line-Microphone Jacks. A double outlet 3-contact insulated Jack.

Cat. No. AX1040 .. 2/- each

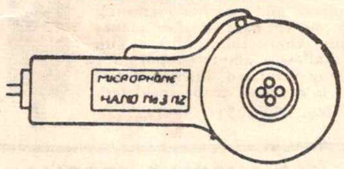
CHASSIS

Metal chassis are available for the following Kits. Details as to whether battery or A.C. powered and chassis dimensions are given below.

Cat. No.	Price
AC1100—6in x 6in x 2¾in. Hikers Two Valve (Battery)	9/-
AC1105—5in. x 4¼in. x 1½in. with 5in. x 5in. Panel. Mighty Midget 1 Valve (Battery)	9/-
AC1106—10½in. x 6¾in. x 2¼in. Easy Built Five Valve (A.C.)	14/6
AC1109—9in. x 9in. x 2in. Outdoor Portable 3 Valve (Battery) ..	10/9
AC1113—9in. x 8½in. x 2in. Popular Skysweeper 4 Valve (A.C.) ..	10/9
AC1115—9½in. x 4½in. x 2½in. Versatile-Radiotron Amplifier 3 Valve (A.C.)	9/-
AC1116—9in. x 6¼in. x 2in. T.R.F. Tuner 3 Valve	9/-
AC1120—10in. x 9in. with Bracket Simplex Valve Tester Panel ..	15/-
AC1125—12in. x 5½in. x 2½in. Defiant 5 Valve (Battery)	14/6
AC1127—10¼in. x 8¼in. x 2½in. Sky-Hawk 4 Valve (A.C.)	10/9
AC1128—7in. x 6in. x 2in. Scout (Battery)	10/9
AC1131—13¼in. x 6in. x 2½in. Bell Tone Amplifier (A.C.)	14/6
AC1132—15in. x 9½in. x 3in. D/W Super Six (A.C.)	15/-
AC1134—11½in. x 4¼in. x 2½in Easy Built 4 Valve Clipper (Battery) ..	10/9

WAR SURPLUS BARGAINS!

CARBON HAND MICROPHONES



A solidly constructed Hand Type Microphone, featuring a press switch mounted in the handle. Complete with 6ft. flex and heavy line plug (Phone Plug). Unit is enclosed in a heavy bakelite case. This Microphone is suitable for telephone amateur radio work and any similar purpose requiring a sturdy mike.
Cat. No. AX1063 .. **12/6** each

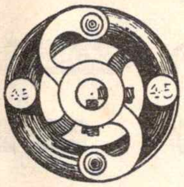
DYNAMIC HAND MICROPHONES

Similar in physical construction and appearance to the above (No. AX1063). Has lower output than the Carbon type and therefore requires the use of the Microphone Input Transformer listed below. This "Mike" gives better response than the Carbon type.
Cat. No. AX1064 .. .. **17/6**

MICROPHONE TRANSFORMERS, for use with above.
Cat. No. AX1013 .. **12/6** each

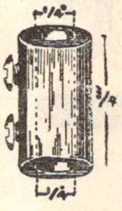
TERMINALS

CONDENSER COUPLINGS



¼in. Bakelite and Metal Flexible Condenser Couplings for ganging two variable condensers. Flexible brass connector on bakelite mount.
Cat. No. AC901—
2/3 each

SHAFT CONNECTORS

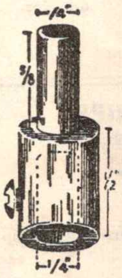


N°250

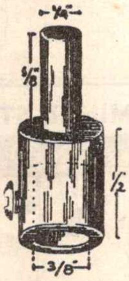
Solid Brass Shaft Connector, with two set screws each end for joining 2 ¼in. shafts.
Cat. No. AC902 **8D.** each

THE BEST COSTS LESS
AT THE LAMPHOUSE!

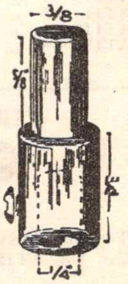
SHAFT ADAPTORS



N°50-50



N°50-75



N°750

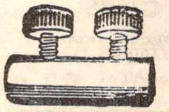
For Condenser or Volume control shafts, etc.
¼in. to ¼in. shaft extender (50-50)—
Cat. No. AS134 1/6 each

⅜in. to ¼in. shaft reducers (50-75)—
Cat. No. AS135 1/6 each

¼in. to ⅜in. shaft reducers (750)—
Cat. No. AS133 1/6 each

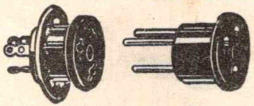
¼in. Diam. Ebonite Rod for insulated condenser shaft; 6in. lengths—Cat. No. AS151 8d. each

CONNECTORS—SINGLE



Small Brass Connector Size ¼in. x ¾in.
Cat. No. AC194—
3D. each

CHASSIS PLUGS AND SOCKETS



Miniature 3-pin type. Socket mounts on to chassis. Extremely useul unit for connecting external units such as microphones, pickups, etc.
Cat. No. AP290 .. .. **1/3** pair

LAMPHOUSE GUARANTEE

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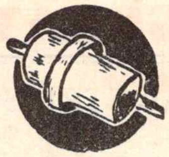
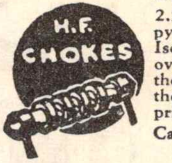
H.F. CHOKES



Honeycomb wound H.F. Chokes. 10M.H.
Cat. No. AC140—
2/9 each



H.F. CHOKES.
2.5 M.H. Pye Wound (4-pye) Chokes, wound on Isolantite Former. We have overbought this line and are therefore prepared to sell them at a greatly reduced price. Usually 4/6 each.
Cat. No. AC138 .. **1/9**

Similar to above but with connecting leads cut rather short. Removed from New ZC1 Receivers.
Cat. No. AX1047A **1/3**

L.F. CHOKES

30 hy. 50 M.A. Filter Chokes.
Cat. No. AC141 .. .. .. **14/6**

30 hy. 100 M.A. ditto.
Cat. No. AC142 .. .. .. **19/6**

30 hy. 150 M.A. ditto.
Cat. No. AC143 .. .. .. **32/6**

WAR BARGAINS!

CHOKES REMOVED FROM ZC1 TRANSCEIVERS

30 Henry 100 MA Filter Chokes

Mounted in metal containers 2in. high x 3in. between mounting holes. Lug type connection.
Cat. No. AX1010 .. **17/6**

Modulation Chokes

Small Heavy Duty Modulation Chokes. Similar dimensions and description to above. Suitable for plate circuits of 6V6GT or similar valve.
Cat. No. AX1011 .. **5/11** each

Parasitic Chokes

The ideal Unit for preventing parasites in low and medium power Transmitters. 3¼in. x ¼in.
Cat. No. AX1047 .. **1/-** each

Vibrator Chokes

Low tension Hash Chokes for use with Vibrator Packs and Motor Car Sets, etc. Size: 1½in. long, ¾in. diameter. Wax coating.
Cat. No. AX1141 .. **1/9** each

Cat. No. AX1155—High Tension R.F. .. .. .. **1/9** each

Low Tension R.F. Chokes

Good Hash Choke as used in ZC1 Vibrator Unit. 1½in. long wound on ½in bakelite former.
Cat. No. AX1200 .. **6D.** each

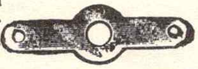
650 Micro Henry Choke

Cylindrical 1½in. long x 1in. with solder lug mounting. Might be used as a crystal set coil or for line filter work.
Cat. No. AX1246 .. **9D.** each

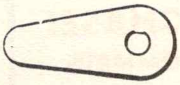
LUGS — CONNECTORS — CLIPS

SOLDERING LUGS.

4 B.A. Double Ended Soldering Lugs (tinned).
Cat. No. AT7 3D. doz.



PEAR-SHAPED LUGS

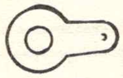


Small, ½in. long, 5/32in. hole.
Cat. No. AT2 3D. doz.

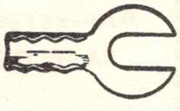
Large, ¾in. long, 5/32in. hole.
Cat. No. AT3 3D. doz.

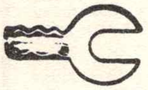
DROP-SHAPED LUGS

⅝in. long, 7/32in. hole.
Cat. No. AT4 3D. doz.



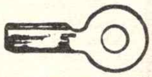
Large N.P. Terminal Spade Lugs.
Cat. No. AT5—
3D. each



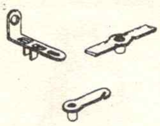


Small N.P. Terminal Spade Lugs.
Cat. No. AT17—
1D. each, 11D. doz.

Ring Type Small N.P. Lugs. Cat. No. AT18—
1D. each, 9D. doz.



RIVET LUGS



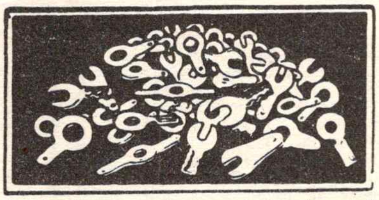
Double-ended solder lugs with centre hollow rivet. 13-16in. long, ⅛in. rivet.
Cat. No. AT37 3D. doz.

Solder lugs with hollow rivet one end. 7-16in. long, 3-16in. rivet.
Cat. No. AT38 3D. doz.

Same as above, but 9-16in. long, ⅛in. rivet.
Cat. No. AT39 .. .. .. 3D. doz.

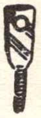
Angle Coil-mounting lugs, ¾in. x ⅜in.
Cat. No. AT42 .. .. .. 3D. doz.

SOLDERING LUG ASSORTMENT



A miscellaneous selection of 100 Assorted Solder Lugs.
Cat. No. AT1 .. .. 1/9 Packet

SPADE ANCHOR LUGS

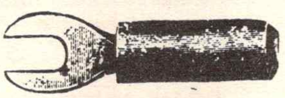


Steel cadmium plated for mounting coils, condensers, shield cans, etc., 6/32 thread. Hole in flat portion fits 9/64in. diameter eyelets and 6/32 screws.
Cat. No. AT40 .. 2D. each

CORD GRIP DIAL LAMPHOLDERS

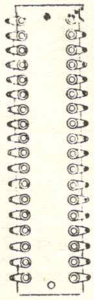
Take the standard screw base panel lamp. Cord mounting with no fastening bracket. Apart from their use as dial lampholders they can also be used with decoration strings, etc.
Cat. No. AD509 .. .. .. 9D. each

INSULATED SPADE TERMINALS



Insulated Spade Terminals are useful for easy connection of wires under terminals, etc. Colours: Red and Black.
Cat. No. AT15 .. .. .. 4D. each

R.C.S. TERMINAL BOARDS



BAKELITE TERMINAL BOARDS.

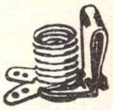
for neat assembling of Resistors and Condensers. Lugs are eyeletted on to the bakelite. Mounting holes provided.

23 LUG STRIP.

Neatness is a big factor in any job!

Cat. No. AT145 .. 4/-

DIAL LIGHT HOLDERS



With clip style bracket, made to clip over condenser, etc. To take screw globe.
Cat. No. AD504—
9D. each

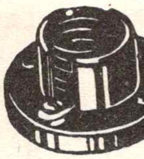
As above, but without clip—AD506 9D. each

DIAL LAMP HOLDERS, similar to above, but to take miniature bayonet type Dial Lamps. With clip.
Cat. No. AD505 .. .. .. 1/- each

MINIATURE SCREW HOLDERS

Bakelite Lampholders, miniature screw thread which takes torch and similar lamps.

Cat. No. AS223—
11D. each

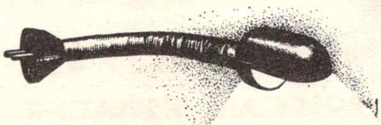


WAR BARGAINS!

METAL REELS

8½in. Diameter Metal Reels complete with small winding handle and anchoring brackets. Will hold approximately 70 to 100 yards single wire cable. Many uses can be found for these reels such as, garden hose winders, clothes line winders, boys hoops and dozens of other uses.

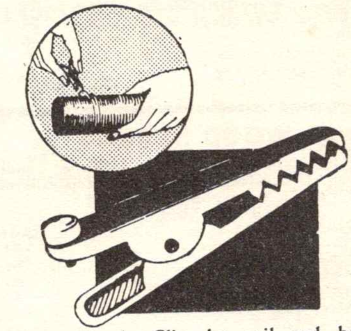
Another bulk purchase from War Assets enables us to sell these at
Cat. No. AX1082 .. 1/6 each



"ANDY" LIGHT

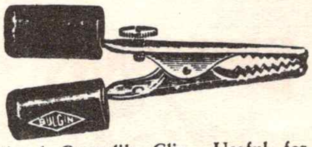
This Unit consists of an insulated socket and plug collar, 3in. flexible Swan Neck and Torch Bulb type Lampholder.
Cat. No. AX1042 .. 2/11 each

ALLIGATOR CLIPS



Here's a Handy Clip for coil and battery connections. The strong spring ensures a good connection.
Cat. No. AC19 .. .. .. 5D. each

INSULATED CROCODILE CLIPS



Insulated Crocodile Clip. Useful for servicemen, experimenters, etc., when dealing with high voltages. Wire passes through insulator to grip sleeve and screw. Nickel-plated. Red and black insulated.
Cat. No. AC18 .. .. .. 1/- each

UNIVERSAL BATTERY CLIPS

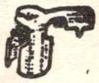
British made, these Clips have good strong springs that make a sure contact.
Cat. No. AC120— 5 amp. (Pee Wee) 8d. each
Cat. No. AC121—10/25 amps. .. 1/- each
Cat. No. AC122—50 amp. .. 1/1 each

RUBBER COVERED GRID CLIPS

Screen Grid Clips to fit Octal based, glass or metal Valves. Rubber protecting cap moulded over clip. 6in. length of pushback wire attached.—Cat. No. AX1043 .. 3D. each

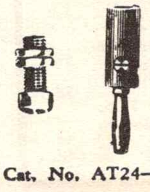
CLIPS, SCREEN GRID

For attaching leads to the top of screen grid valves, etc.
Cat. No. AC23 .. 1D. each



Cat. No. AC24—
Screen Grid Caps for Metal valves .. 1D.

BANANA PLUGS AND SOCKETS



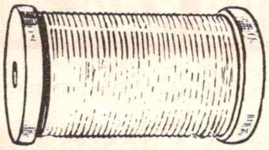
Banana Plugs and Sockets have all sorts of uses, such as for aerial and earth connections, coil tapping, battery connections, etc. Red and Black. Insulated.

Cat. No. AT23—Banana Plugs only 6D. each

Cat. No. AT24—Sockets for above 6D. each

WIRE — CABLE

INSTRUMENT WIRES



Only the Best British Wire Stocked.

PRICES PER REEL.

Prices given below were correct at the time of going to press.

Further shipments covering various sizes are anticipated during the current season and all orders will be executed at the ruling price.

ENAMELLED WIRE.

¼lb. Reels. Cat. No.	Gauge	Price	1lb. Reels Cat. No.	Gauge	Price
AW400 ..	16	1/8	AW480 ..	16	6/6
AW402 ..	18	1/8	AW482 ..	18	6/8
AW404 ..	20	1/9	AW484 ..	20	6/11
AW406 ..	22	1/10	AW486 ..	22	7/3
AW408 ..	24	1/11	AW488 ..	24	7/6
AW410 ..	26	2/-	AW490 ..	26	7/10
AW412 ..	28	2/-	AW492 ..	28	8/2
AW414 ..	30	2/3	AW494 ..	30	8/11
AW416 ..	32	2/4	AW496 ..	32	9/5
AW418 ..	34	2/6	AW498 ..	34	10/9
AW420 ..	36	2/9	AW500 ..	36	11/9
AW422 ..	38	3/-	AW502 ..	38	13/-
AW424 ..	40	3/5	AW504 ..	40	—

SMALLER REELS

Cat. No. AW356—29 S.W.G. Enamelled Wire 100ft. 1/3

Cat. No. AW358—30 S.W.G. Enamelled Wire 100ft 1/3

D.C.C. WIRE

¼lb Reels. Cat. No.	Gauge	Price	1lb. Reels. Cat. No.	Gauge	Price
AW432 ..	16	2/4	AW510 ..	16	7/3
AW434 ..	18	2/5	AW512 ..	18	7/11
AW436 ..	20	3/1	AW514 ..	20	9/2
AW438 ..	22	3/6	AW516 ..	22	10/8
AW440 ..	24	4/1	AW518 ..	24	13/-
AW442 ..	26	4/8	AW520 ..	26	—
AW444 ..	28	5/3	AW522 ..	28	—
AW446 ..	30	7/-	AW524 ..	30	—
AW448 ..	32	7/3	AW526 ..	32	—
AW450 ..	34	7/6	AW528 ..	34	—
AW452 ..	36	8/-	AW530 ..	36	—

CONNECTING WIRE

ENSIGN PUSH BACK WIRE

Best quality solid push back wire in assorted colours. 10ft. coils.
Cat. No. AW157 .. .. **1/3** coil

Stranded push back wire in assorted colours. 10ft. coils.
Cat. No. AW156 .. .. **1/3** coil

(Any length of push back wire can be supplied at the rate of 1/- for 10 feet.)

Motor Car Cables. See Page 31.

Special Purchase

WIRES SUITABLE FOR SPEAKER EXTENSIONS, TALK BACK SYSTEMS, BELL INSTALLATIONS AND SIMILAR PURPOSES.

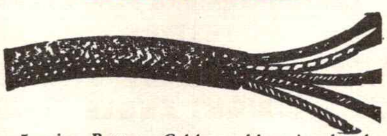
2-Wire Twin Twisted P.V.C. Flexible Stranded Copper Wire.
Cat. No. AW87A .. **6**D. Yard

2 Wire Rubber-Covered Flexible Wire, covered overall with a waterproof braid.
Cat. No. AW87 .. .. **6**D. Yard

METALLIC SHIELDED WIRE

Metal shielded wire. Suitable for grid leads, input leads on Amplifiers, Microphones, Electric String Instruments, etc.
Cat. No. AW158 .. .. **4**D. per ft.

BULK PURCHASE
BATTERY CABLE



5 wire Battery Cable, rubber insulated and in distinctive colours. Covered overall in cotton braid. Bulk buying again chops the price down to as low as the 1939 price.
Cat. No. AW101 .. .. **6**D. ft.

8 Wire Battery Cable.
Cat. No. AW102 .. .. **6**D. ft.

MICROPHONE CABLE

Insulated and shielded Microphone Cable for connecting Pickups, Microphones, Speakers, etc.

Cat. No. AW160—Single .. **7**D. ft.

Cat. No. AW162 Twin .. .. **1/-** ft.

230 Volt Power Flex. Refer Page 33.

PLASTIC CONNECTING WIRE

10/.010 P.V.C. Insulated Flex, suitable for battery connections, indoor aerials and for any other purpose requiring a light, thin, stranded insulated flexible wire. Assorted Colours.
Cat. No. AW159—10ft. Coil .. **1/-** coil

Any length can be supplied at a rate of 1/- for every 10ft.

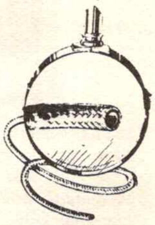
36 GAUGE ENAMELLED WIRE—Large Reels

36 gauge Enamelled Copper Wire. We have several reels averaging between 2 and 3lb. each. There is not a great call for this gauge on big reels so we cut the price and make them a bargain offering.
Cat. No. AX1377 .. **6/6** lb.

SPAGHETTI INSULATING TUBING

Cat. No.	Size	Lengths	Each
Cat. No. AS1—	1 mil.,	1 yd. lengths ..	4½d.
Cat. No. AS2—	2 mil.,	1 yd. lengths ..	5d.
Cat. No. AS3—	3 mil.,	1 yd. lengths ..	5d.
Cat. No. AS4—	4 mil.,	1 yd. lengths ..	6d.
Cat. No. AS6—	5 mil.,	1 yd. lengths ..	7d.
Cat. No. AS5—	6 mil.,	1 yd. lengths ..	8d.
Cat. No. AS7—	8 mil.,	1 yd. lengths ..	1/-
Cat. No. AS8—	10 mil.,	1 yd. lengths ..	1/-

SHIELDED BRAID



Metal Screening Tubing, for slipping over insulated wires, etc., for shielding. In many modern A.C. circuits it is essential to screen grid and plate leads to prevent pick-up on these leads. Flexible.

Cat. No. AW163—⅛in. **6**D. ft.

Cat. No. AW164—3/16in. **6**D. ft.

RESISTANCE WIRE

100 yard Reels of Nichrome Resistance Wire for winding your own Resistors, Shunts, Elements, etc.

Cat. No. AW380—37 S.W.G. (45 ohms per yard) .. .. 1/6 reel

Cat. No. AW383—40 S.W.G. (200 ohms per yard) .. .. .. 1/6 reel

Cat. No. AW377—33 S.W.G. (19.5 ohms per yard) 100ft. reel. 1/6

RESISTANCE WIRE

For making Resistor Shunts, Elements and other items requiring high-grade Resistance Wire.

Cat. No. AW368—24 S.W.G. (4.20 ohms per yard) 40ft. reel 1/6

Cat. No. AW370—26 B. & S. 7.562 ohms per yard) 50ft. reel 1/6

Cat. No. AW373—28 B. & S. (12.16 ohms per yard) 50ft. reel 1/6

Cat. No. AW378—34 B. & S. (45.8 ohms per yard) 100ft. reel 1/6

Cat. No. AW379—36 S.W.G. (34.20 ohms per yard) 100ft. reel 1/6

Cat. No. AW382—39 S.W.G. (145.6 ohms yer yard) 100yd. reel 1/6

Cat. No. AW384—40 B. & S. (205 ohms per yard) 100yd. reel 1/6

RESISTANCE RIBBON

Cat. No. AW389—1-32 x .0035 Resistance Ribbon (14.12 ohms per yard) 50ft coils 2/6

Cat. No. AW398—1-64 x .003 Resistance Ribbon (36.07 ohms per yard) 100ft coils 2/6

BLACK INSULATING TAPE

BEST BRITISH MAKE
INSULATING TAPE
EXTI
BLACK
INSUL
TAP
HAS MANY USES

Has many uses, such as binding hockey sticks, axes, etc., besides being an excellent means of insulation.

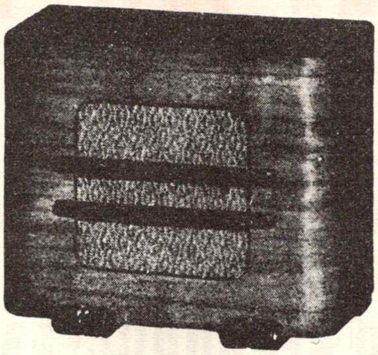
	roll
Cat. No. AS235—5yd. rolls x ½in .	**8**D.
Cat. No. AS237—10yd. rolls x ¾in.	**10**D.
Cat. No. AS238—8oz. rolls x ¾in. ..	**2/7**

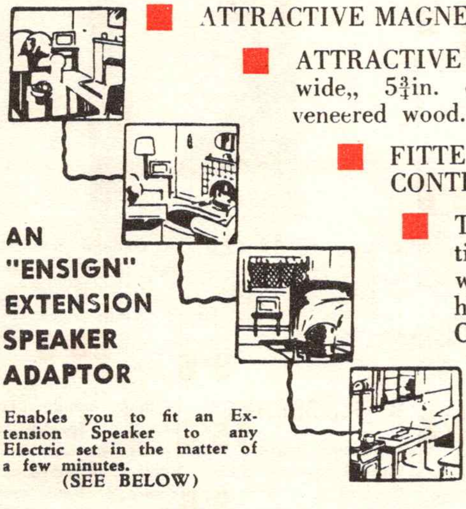
MAKE EVERY ROOM A RECEPTION ROOM

with an

ENSIGN

EXTENSION SPEAKER





- ATTRACTIVE MAGNET SPEAKER WITH 5½in. CONE.
- ATTRACTIVE CABINET, 8½in. high, 11in. wide,, 5¾in. deep. In Dark Brown richly veneered wood.
- FITTED WITH 10,000 OHM VOLUME CONTROL.
- Type of Speaker permits connections to all types of Receivers, whether mains or battery, having high impedance output.
Cat. No. AS996— **£3/19/6**
- Cat. No. AS995—As above but incorporating an 8in. Speaker instead of a 5½in. **£4/9/6**

AN "ENSIGN" EXTENSION SPEAKER ADAPTOR

Enables you to fit an Extension Speaker to any Electric set in the matter of a few minutes.
(SEE BELOW)

EXTENSION SPEAKER CABINETS

Richly veneered well made Speaker Cabinets. Dimensions: 12in. wide, 10in. high, 6¾in. deep Finished in Honey-Coloured Trimmings. (Similar to illustration of "Ensign" Extension Speaker.)

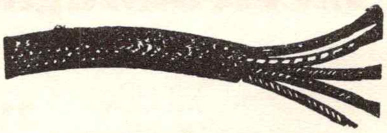
Cat. No. AC151 .. .. **39/6** each

SPEAKER FLEX.

Thin Twin Transmission Cable, for extension Speakers, Speaker Systems or for double doublet and similar Aerial Systems. Standard Flexible 2-Core Wire, rubber-covered and covered over all in a Waterproof Braid. Flexible and long-lasting.

Cat. No. AW87 .. .. **4D.** per yard

MULTI-WIRE SPEAKER CABLE



5-wire Speaker Cable, insulated with P.V.C. in distinctive colours and bound over all in cotton braid.

Cat. No. AW101 .. .. .. **6D.** ft.

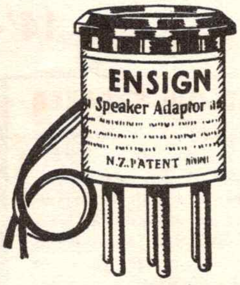
8-wire Ditto cotton braided over rubber insulated wires. Special bulk purchase enables us to sell at . . .

Cat. No. AW102 .. .. .. **6D.** ft.

OUR GUARANTEE !

The Lamphouse 7-DAY MONEY BACK GUARANTEE protects your every purchase.

"ENSIGN" SPEAKER EXTENSION ADAPTORS



Extension Speaker Adaptors. The problem of fitting an extension speaker to your electric set has been solved! All you do is remove the output valve, plug in the adaptor, then put back the valve on top of the adaptor. The adaptor can also be used as a tone improver.

Can be used in conjunction with all P.M. speakers which have output transformers fitted.

Cat. No. AS680—4-pin	..	**7/6** each
Cat. No. AS681—5-pin	..	**7/6** each
Cat. No. AS682—6-pin	..	**7/6** each
Cat. No. AS683—Octal	..	**8/6** each

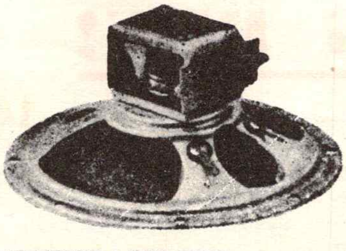
SPEAKER SILK

Special Fabric for putting in front of Speakers in cabinets, etc.

Cat. No. AS900—12in. x 12in.	**1/5** each
Cat. No. AS901—16in. x 16in.	**2/6** each

5-inch AMERICAN P.M. SPEAKERS

THE LOWEST PRICE 5in. SPEAKER ON THE MARKET !



DEPENDABILITY, PERFORMANCE, APPEARANCE !

Cadmium Plated Overall.

LOOK—

each (Complete)

Cat. No. AS950.

24/11

Complete with separate

MIDGET OUTPUT TRANSFORMER

5,000 ohms.

FEATURING:

The Famous "ALNICO 5" MAGNET

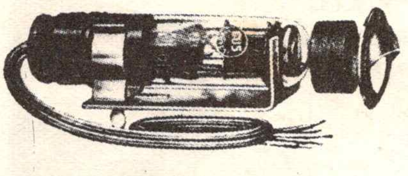
The magnet that combines LARGE CAPACITY with Exceptionally LIGHT WEIGHT.

We bought a big quantity at a good price, so now you take advantage of it!

IT'S ANOTHER LAMPHOUSE BARGAIN !

TEST EQUIPMENT

MAGIC EYE ASSEMBLY



For 6-prong Tubes. An easy method of adapting a Magic Eye or Electron Ray Tube to any standard radio receiver having a.v.c., or any Frequency Modulated receiver. Also used extensively for installing Magic Eyes as indicators in test instruments such as signal tracers, condenser testers, etc.

The metal encased socket is completely wired with a 5-wire colour-coded cable 22in. in length. The necessary 1-megohm target-to-plate resistor is concealed and protected by the socket's metal shell.

Complete set of parts, without valve.

Cat. No. AS500 .. .. .. **10/6**

NEW LINE

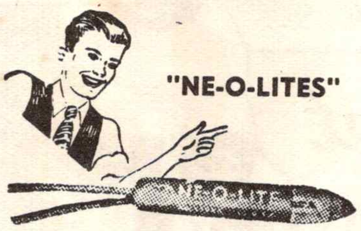
ENSIGN 5 AMP. CHARGERS

Heavy Duty 6-volt 5 amp. Ensign Chargers. Will charge all types of 6-volt Wet Batteries. Operates from 230-volt A.C. Connect direct to battery. Uses a 5 amp. "Westinghouse" Dry Rectifier. Mounted in crackle finished metal case, length 6¾in., height 6½in., width 4½in.

Cat. No. AA236 .. .. **£6/10/-**

LAMPHOUSE GUARANTEE

Any goods that prove in any way unsuitable may be returned undamaged within seven days from receipt and your money will be refunded in full.



"NE-O-LITES"

Every Experimenter and Serviceman should have one!

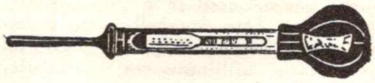
Neon Indicator attached to prods.

Here's what it does:

1. Will test any current from 110 v. to 550 v., and will indicate the voltage.
2. Will tell instantly whether A.C. or D.C. current.
3. Will detect live and earth wires.
4. Will give a temporary pilot light on any electrical apparatus.

Cat. No. AM254 .. .. **4/6** each

HYDROMETERS



Cat. No. AM300 .. .. .. **7/6**

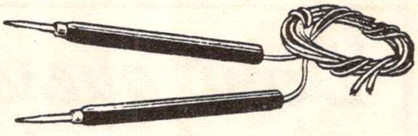
SPARE FLOATS—Cat. No. AM301 **2/3**

War Surplus

This Year's Annual features hundreds of War Surplus Bargains. Look for them—they're 1949's greatest buy.

ALL PRICES IN THIS CATALOGUE ARE SUBJECT TO ALTERATION WITHOUT NOTICE.

"OXFORD" TEST PRODS



Polished Ebonite Handles and complete with flexible leads.

Cat. No. AM1 .. .. .. **7/-** pair

METER SHUNTS

Meter Shunts wound for use with 0-1 M.A. Meters, with internal resistance of 100 ohms. Bobbin wound. Accurately adjusted. Length 1½in., Diameter ½in.

Cat. No. AM70— 25 milliamp
Cat. No. AM71— 50 milliamp
Cat. No. AM72—100 milliamp
Cat. No. AM73—250 milliamp
5/- each

Special sizes may be made to order.

"MARQUIS" TEST PRODS

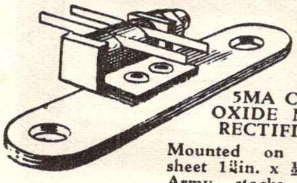
Plastic handled Test Prods. Coloured Red and Black. Length 4in. Diameter ½in. Supplied without leads.

Cat. No. AM5 .. .. .. **3/8** pair

Suitable flexible leads would be Cat. No. AW300 Cellulose Covered Lead .. 5d. yard

WAR BARGAINS!

METER RECTIFIERS



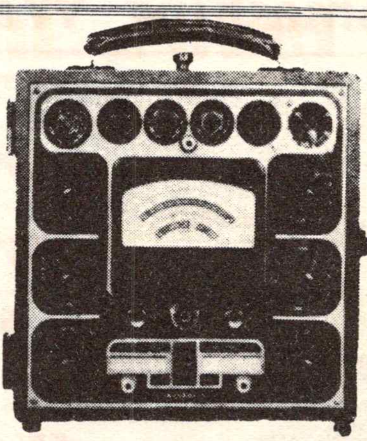
5MA COPPER OXIDE METER RECTIFIERS.

Mounted on plastic sheet 1¾in. x ½in. Ex Army stocks, at a fraction of their true value.

Cat. No. AM45 .. **5/-** each

The "RADAMETA" VALVE-TESTER and MULTI-METER

Another Great Value in Test Equipment the "RADAMETA" Mutual Conductance VALVE TESTER and MULTI-METER



This Tester is a modern instrument, featuring a Roller-Chart Dial.

Tests modern Octal-based Tubes. Multi-Meter reads over 21 ranges.

IT'S PORTABLE! WEIGHS ONLY 13lb.

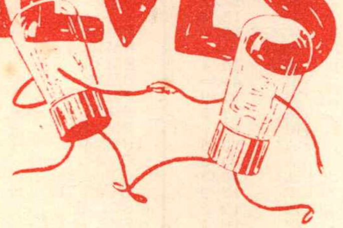
Four ranges milliamperes 0/1, 0/10, 0/50, 0/250. Three ranges ohms 0/500, 0/50,000 0/10 megohms. Five ranges D.C. volts (1000 O.P.V.), 0/10, 0/50, 0/250, 0/500, 0/1000. Five ranges A.C. volts (1000 O.P.V.) 0/10, 0/50, 0/250, 0/500, 0/1000, (all at 50 cycles). Five ranges output volts at 400 cycles, 0/10, 0/50, 0/250, 0/500, 0/1000. Three ranges electrolytic and paper condenser tests. Line check for 240 volts A.C., 50 cycles.

Inter-element shorts test on all valves. Trans-conductance tests on valves direct reading in MA/V. Emission test on rectifier and diode valves. Gas test on all types of valves tested by trans-conductance method. Current consumption 240 v. 50 cycle 40 watts. 6 volt D.C., 2 amps.

NEW "NO EXCHANGE" PRICE!

Cat. No. AM405 .. .. **£34/6/-**

If it's VALVES



THE "LAMPHOUSE" carries a full range of all types of valves. Numerous brands are usually available but owing to Import Restrictions we cannot guarantee being able to supply a specific brand. Always state your first and second preference when ordering. Do not hesitate to write us for any special types not listed—we will probably be able to quote.

Prices Subject to Alteration.

Type.	Price.
01A	9/6
0A3/VR75	16/3
0A4G	13/9
0C3/VR105	19/10
0D3/VR150	19/7
0Z4	13/3
0Z4G	12/8
1A4P	13/10
1A5G	14/2
1A5GT	14/2
1A6	13/2
1A7G	14/3
1A7GT	13/1
1B4P	18/-
1B5/25S	12/7
1C4	13/6
1C5G	13/11
1C5GT	15/-
1C6	13/11
1C7G	13/6
1D4	13/2
1D5GP	14/-
1D7G	13/1
1D8GT	20/5
1E5GP	12/6
1E7GV	18/6
1F4	14/3
1F5G	14/6
1F6	21/6
1F7GV	14/4
1G4GT	13/2
1G5G	11/6
1G6GT	13/3
1H4G	8/5
1H5G	13/5
1H5GT	11/9
1H6G	13/1
1J6G	12/5
1K4	10/5
1K5G	6/9
1K6	14/5
1K7G	13/11
1L4	9/6
1L5G	12/8
1LA4	—
1LA6	22/3
1LD5	19/6
1LH4	27/-
1LN5	19/3
1M5G	13/6
1N5G	12/6
1N5GT	14/-
1P5GT	14/10
1Q5GT	13/-
1R5	13/11
1S4	13/11
1S5	13/11
1T4	13/11
1T5GT	16/-
1U5	15/6
1V	8/5
2A3	16/1
2A5	9/11
2A6	11/3
2A7	11/1
2B7	18/-
2E5	12/-
3Q4	13/3
3Q5GT	14/10
3S4	15/-
3V4	18/-
5R4GT	21/6
5T4	16/2
5U4G	9/7
5V4G	15/1
5W4	10/3
5W4GT	10/-
5X4G	9/1
5Y3GT	7/4
5Y4G	7/3
5Z3	11/9
5Z4	13/6
6A3	16/6
6A4	11/6
6A6	12/11
6A7	11/3
6A8	13/6
6A8G	11/-
6A8GT	11/1
6AB5/6N5	13/6
6AB7/1853	19/2
6AC5G	10/-
6AC7/1852	20/-
6AF6G	11/4
6AG5	18/5
6AG7	18/-
6AK5	37/6
6AK6	17/-
6AL5	22/3
6AQ5	13/9
6AQ6	15/5
6AR7GT	13/5
6AT6	10/11
6AU6	12/6
6AV6	9/8
6B4G	19/6
6B5	17/6
6B6G	11/6
6B7	12/8
6B7S	12/5
6B8	14/10
6B8G	12/10
6BA6	13/7
6BE6	12/9
6C4	15/9
6C5	10/8
6C5G	10/-
6C5GT	10/-
6C6	10/4
6C8G	19/9
6D6	10/1
6D8G	12/7
6E5	12/10
6F5	11/7
6F5G	9/4
6F5GT	9/6
6F6	11/8
6F6G	10/2
6F6GT	9/-
6F7	21/7
6F8G	12/11
6G6G	13/11
6G8G	12/2
6H6	10/-
6H6G	8/6
6H6GT	9/6
6J5	9/10
6J5G	8/3
6J5GT	9/2
6J6	18/5
6J7	11/9
6J7G	10/6
6J7GT	10/10
6J8G	12/-
6K5GT	10/3
6K6G	9/4
6K6GT	10/6
6K7	11/7
6K7G	10/2
6K7GT	9/11
6K8	13/6
6K8G	14/4
6K8GT	13/6
6L5G	9/6
6L6	19/-
6L6G	16/4
6L7	13/7
6L7G	13/-
6N6G	18/-
6N7	13/6
6N7G	11/6
6N7GT	13/1
6Q7	12/4
6Q7G	10/-
6Q7GT	10/7
6R7	12/9
6R7G	10/4
6R7GT	10/-
6S7	12/-
6S7G	11/10
6SA7	10/7
6SA7GT	11/6
6SB7	15/11
6SC7	12/6
6SF5	11/9
6SF7	15/3
6SG7	11/9
6SJ7	10/10
6SJ7GT	12/9
6SK7	10/7
6SK7GT	11/1
6SL7GT	14/3
6SN7GT	13/7
6SQ7	11/8
6SQ7GT	11/-
6SS7	9/6
6T7G	12/1
6U5/6G5	12/7
6U7G	9/10
6V6	14/9
6V6G	10/6
6V6GT	10/-
6W7G	12/6
6X4	11/6
6X5	12/5
6X5G	10/6
6X5GT	10/6
6Y6G	13/6
6Z7G	13/6
6ZY5G	14/4
7A4	15/6
7A5	17/-
7A6	14/-
7A7	14/-
7A8	17/-
7B4	13/-
7B5LT	14/-
7B6	15/6
7B7	14/-
7B8	17/-
7C5	13/-
7C6	14/-
7C7	15/6
7F8	—
7G7	—
7H7	23/-
7J7	23/-
7Q7	—
7Y4	15/6
10	25/11
12A6	20/-
12A6GT	10/9
12A7	16/9
12A8GT	10/10
12B8GT	13/9
12C8	14/1
12F5GT	10/3
12J5GT	9/9
12J7GT	11/6
12K7GT	10/7
12K8	17/-
12Q7GT	11/6
12SA7	11/3
12SA7GT	12/6
12SC7	11/8
12SF5	9/6
12SG7	—
12SH7	—
12SJ7	10/7
12SK7	10/6
12SN7GT	15/6
12SQ7	10/6
12SR7	13/6
12SS7	—
12Z3	11/10
15	16/4
19	12/6
24A	12/-
25A6	13/10
25A6GT	10/9
25A7G	13/6
25A7GT	12/6
25B6G	12/6
25L6	12/6
25L6G	10/-
25L6GT	13/9
25Y5	19/6
25Z5	9/8
25Z6	11/11
25Z6G	9/6
25Z6GT	10/7
26	7/-
27	9/-
30	7/11
31	8/6
32	18/-
33	17/-
34	17/-
35	12/6
35A5	15/6
35L6GT	12/6
35Z3	14/10
35Z4GT	10/5
35Z5GT	10/7
36	10/1
37	11/9
38	10/2
39/44	10/4
41	9/9
42	9/8
43	10/5
45	7/9
45Z5GT	10/6
46	11/9
47	10/10
48	21/-
49	15/9
50	20/9
50L6GT	12/3
50Y6GT	9/6
53	14/9
55	9/6
56	7/6
57	9/8
58	9/8
59	14/11
70L7GT	18/3
71A	9/8
75	9/10
76	7/3
77	9/11
78	10/3
79	11/2
80	6/4
91	18/8
82	12/-
83	11/-
83V	14/6
84/6Z4	11/-
85	9/6
89	9/11
112A	9/6
117Z3	19/3
117Z6GT	16/3
117L7GT	30/-
117N7GT	19/4
117P7GT	—

Transmitting and Special Types

(PRICES ON APPLICATION)

MULLARD VALVES

Type.	Base.	Price.
ABC1	P	14/1
ACO44	A	16/-
AF3	P	17/7
AK2	P	15/9
AL3/AL4	P	13/6
AZ1	P	7/8
AZ31	K	7/8
AZ41	B8A	9/-
CBL1	P	13/6
CBL31	K	16/1
CCH35	K	14/11
CL2	P	14/5
CL33	K	12/7
CL2/CL4	P	14/5
CY1	P	9/11
CY31	K	9/11
DAC32	K	10/9
DAF91	B7G	10/9
DF33	K	12/2
DF91	B7G	10/9
DK32	K	13/-
DK40	D8A	15/6
DK91	B7G	9/6
DL33	K	12/2
DL35	K	12/2
DL92	B7G	10/2
DW2	A	9/6
DW4/350	A	9/6
EAC91	B7G	20/-
EAF41	B8A	12/2
EAF42	B8A	—
EB34	K	10/3
EB4	P	10/3
EB41	B8A	17/9
EB91	B7G	13/9
EBC3	P	11/2
EBC33	K	11/2
EBF2	P	14/5
EBF32	K	13/6
EBL1	P	15/9
EBL31	K	13/9
EC31	K	11/9
EC52	B9G	11/9
EC91	B7G	22/6
ECC32	K	15/3
ECC34	K	15/3
ECC35	K	18/3
ECC91	B7G	18/4
ECH2	P	16/3
ECH3	P	16/3
ECH35	K	14/5
ECH41	B8A	13/6

Continued overleaf

PHILIPS VALVES—*Continued*

3543—P.E. cell (Gas) wire in	71/7
3546—P.E. cell (Gas)	64/10
* Also available without base.	
20AV—P.E. cell (Vac) Amer. loctal	
20CG—P.E. cell (Gas) Amer. loctal	
20CV—P.E. cell (Vac) Am. loctal	
55CG—P.E. cell (Gas) Am. Pee-wee	
56CG(918)—P.E. cell (Gas) 4-pin Amer.	
90AV—P.E. cell (Vac) Am. Min B7G	
90CG—P.E. cell (Gas) Am. Min B7G	
90CV—P.E. cell (Vac) Am. Min B7G	
4060—3-pin "H"	179/2
4613(E406)—4-pin English	39/2
4624(E707)—4-pin special	80/2
4654—Side contact 8-pin "P"	24/3
4657—5-pin English	22/6
4673—Side contact 8-pin "P"	18/-
4682(AL2)—Side contact 8-pin "P"	18/6
4689—Side contact 8-pin "P"	30/-
4690—Side contact 8-pin "P"	44/7
4699—Side contact 8-pin "P"	25/3
4687—Stabilizer neon	14/-
7475—Stabilizer neon	21/2
85A1—Stabilizer neon	19/10
100E1—Stabilizer neon	88/-
13201—Stabilizer neon	46/10
150A1—Stabilizer neon	28/10
150C1	32/5
DB7-2—Cathode ray tube	
DB9-3—Cathode ray tube	
DG4-2—Cathode ray tube	
DG7-1—Cathode ray tube	
DG7-2—Cathode ray tube	
DG9-3—Cathode ray tube	
DN7-2—Cathode ray tube	
DN9-3—Cathode ray tube	
DN9-5—Cathode ray tube	
TH1—Vacuum thermocouple	
TH2—Vacuum thermocouple	
TH3—Vacuum thermocouple	
TH4—Vacuum thermocouple	
TH5—Vacuum thermocouple	
4383—Rare gas fuse	

Substitute Type	Philips Type	Base Description	Price
DW2	506	4-pin English	9 6
FC2A	KK2	7-pin English	17 9
FC13	AK2	7-pin English	16 0
PenA4	CK1	Side contact 8-pin "P"	16 0
Pen4VA	AL4	7-pin English	12 2
Pen4DD	E463	7-pin English	13 9
PM2B	ABL1	7-pin English	15 9
PM2HL	KDD1	4-pin English	12 2
PM22A	KC3	4-pin English	9 6
PM24M	KL4	5-pin English	12 2
SP4	E443H	5-pin English	15 3
SP4	AF7	7-pin English	17 9
SP4	E446	5-pin English	17 9
FC4	E442	5-pin English	17 9
SP4	E452T	5-pin English	17 9
TDD2A	KBC1	5-pin English	12 2
TDD4	ABC1	7-pin English	13 9
UR3C	CY2	7-pin English	16 0
VP2B	KF3	7-pin English	17 9
VP4	E447	7-pin English	17 9
VP4A	AF2	5-pin English	17 9
VP4b	AF6	7-pin English	14 5
VP13A	CF2	Side contact 8-pin "P"	15 3
2D4A	AB1	4-pin English	10 3
345V	E424	5-pin English	10 9
6X5P	EZ2	Side contact 8-pin "P"	9 0
6X5P	EZ3	Side contact 8-pin "P"	9 0
904V	E438	5-pin English	11 9

LAMPHOUSE RADIO BOOKS

"The Lamphouse" RADIO CIRCUIT BOOK

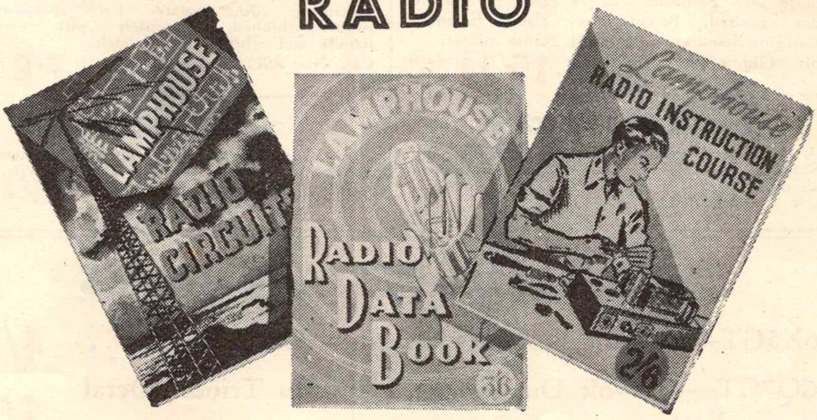
An 80-page booklet containing nearly 200 different Circuits. Circuits of all types, from Crystal Sets to a 26 Valve De Luxe Receiver. Amplifiers, power packs, electric fence units, testing equipment, short-wave converters, wave traps, oscillators, aerial systems—in short, a Circuit to meet every requirement. Schematic diagrams only are given and not constructional details. No claim is made that this book contains any new Circuits all having previously been published in Lamphouse Annuals or Radiograms.

Enthusiasts, whether beginners or experienced servicemen, will find this book invaluable as a reference medium. Your Radio Library will not be complete without a copy.

Cat. No. AB100—Radio Circuit Book.
Priced at 2/6

Postage 1d. extra.

All About RADIO



"The Lamphouse" RADIO DATA BOOK

A 96 Page Booklet containing a veritable gold mine of both Radio and Electrical Data, Facts, Figures, Tables and Charts gathered from various Radio and Electrical Text-books and Manuals, and placed between two covers to form the handiest reference guide an experimenter or serviceman could wish for. BE SURE AND GET YOUR COPY.

Cat. No. AB103—Lamphouse Data Book 3/6

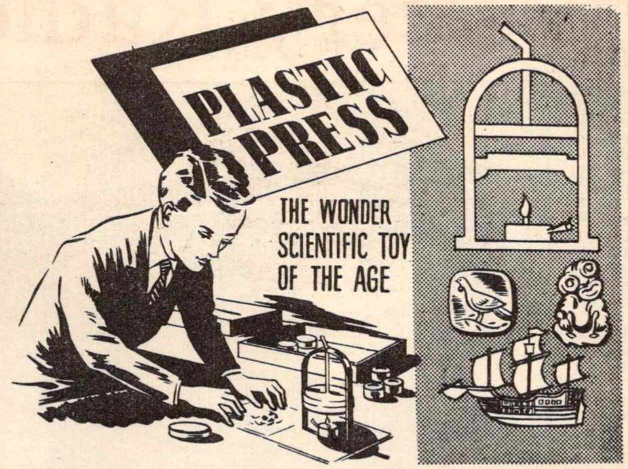
Postage, etc., 2d.

"The Lamphouse" RADIO INSTRUCTION BOOK

This 48-page, attractively covered Booklet contains a simple yet most thorough Radio Course. Compiled from previous Lamphouse publications, revised and rewritten in simple, everyday language, for those enthusiasts starting out in Radio as a hobby or a career. Devoid of any deep technical terms as used by Radio veterans. Just a straight-out study in basic radio principles and theory. Questions set and answers given on each chapter.

Cat. No. AB101—Lamphouse Instruction Course .. Price 2/6

Postage 1d. extra.


PLASTIC PRESS
THE WONDER SCIENTIFIC TOY OF THE AGE

WITH THIS SET MOULD THESE ARTICLES IN MODERN PLASTICS

PLASTIC KIT - SET

Fun and Instruction for Young and old

Mould your own plastic novelties with this modern plastic kitset. Outfits consist of seven different colours of plastics, heating lamp, hand press, dies, and complete instructions. Great hobby for young or old.

Cat. No. AU220 .. .. .. **29/6**

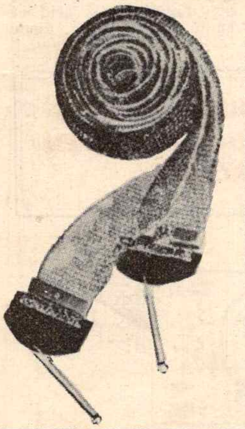
INFRA-RED LAMP BULBS

As used for medical lamps, industrial purposes, such as paint drying, chicken brooders, etc., etc.—230-volt.

Cat. No. AL651—With E.S. Cap .. .. **17/4** each

Cat. No. AL650—Standard Bayonet Cap .. .. .. **17/4** each

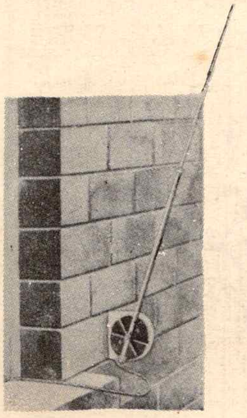
AERONET AERIAL



Here's a new aerial. The Aeronet is made of woven metal net, 2½in. in diameter. Although only 25ft. long, it contains over 2,000 feet of copper ribbon wire. It is this enormous collective surface area in such a short overall length that makes it so efficient as an aerial, both for broadcast and shortwave. For outside or inside use.

Cat. No. AA290— **17/6** each

AERTRAX HOUSE AERIAL



Two-piece house aerial is designed for universal mounting and fixing under all conditions, being easily adjustable as required. May be fixed to a wall, window sill, caravan, car, etc., and the aerial can be retracted in a few seconds. The aerial is of robust construction and extremely resilient as it is made from duralium tubing, 7ft. 6in. in length and made in two sections. Wing nut permits easy adjustment, while a O.B.A. screw provides a connection for the lead-in wire.

Cat. No. AA340 .. .. **30/-** each

BARGAIN LINES TO CLEAR

COILS

Coils for 1084 Army Transmitters:—

Cat. No.	Range	Kc.'s
AX1512	A	20,000-14,300
AX1513	B	14,300-10,700
AX1514	C	10,700- 6,000
AX1515	D	6,000- 4,285
AX1516	E	4,285- 2,500
AX1517	F	2,500- 1,600
AX1518	G	1,600- 1,000
AX1519	H	1,000- 600
AX1520	J	600- 350
AX1521	K	350- 200
AX1522	L	200- 120
AX1523		180
AX1524		40

ALL **2/-** EACH TO CLEAR

Wood Boxes to hold one of any of above Coils.
Cat. No. AX1525 .. .. **1/6** each

16 Coils in case for Type 1083. Any receiver.
Cat. No. AX1528 .. .. **12/-** set

Individual Coils for X1083 Transceiver.
Cat. No. AX1526 .. .. **1/-** each

INSULATED WIRE

Hand-drawn No. 10 solid American copper, well insulated. Ideal for low voltage circuits carrying heavy current, such as private generating plants, etc.,
Cat. No. AX1510 .. .. **3D.** yard

¼in. x 2½in. long Pillars with threaded wing nut pinned on.
Cat. No. AX1511 .. .. **3D.** each

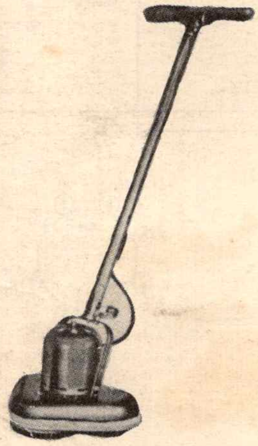
9-volt, 16 C.P., double-contact motor-car lamps.
Cat. No. AX134 .. .. **3D.** each

SMITH'S "MINUTE" TIMERS

Boon for Housewifes, Photographers, and others requiring a warning after a predetermined number of minutes. Setting pointer to number of minutes required, automatically winds timer which rings single gong after minutes have expired. Size 3½in. x 3½in. x 2½in. deep.
Cat. No.—AU118 .. .. **26/6** each

VACUUM CLEANERS

Just arrived supplies of "Empire Electric" Vacuum Cleaners, complete with all accessories. Full particulars on request.
Cat. No. AE198 .. .. **£17/9/6**



ELECTRIX BRITISH FLOOR POLISHER

This floor polisher is an invaluable aid to the quick and efficient polishing of wood floors, linos, surrounds and tiles. Three brushes revolve at high speed obtain a brilliant polished surface. The triangular construction enables the most easy access to corners and the rubber protection buffer avoids damage to skirting boards and furniture. The motor is robustly constructed and is fitted with self-lubricated ball bearings. A generous length of flex ensures a wide polishing range—230-volt.

NEW LOW PRICE! SALES TAX OFF!

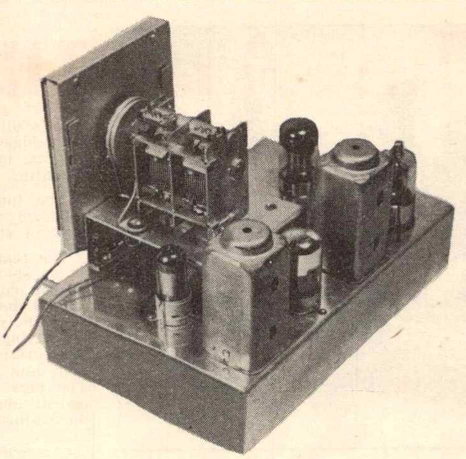
Cat. No. AE228 .. .. **£15/-/-**

PARTS LIST FOR "AIRLINE 4."

1 Chassis
1 "Sky-King" Dial
1 2-gang Variable Condenser
1 DK40 Philips Valve
1 1LN5 Valve
1 1H5GT Valve
1 3D6/1299 Valve
2 I.F. Transformers
2 Trimmers
3 .1 mfd Condensers
1 .25 mfd. Condenser
2 .02 mfd. Condensers
1 .01 mfd. Condenser
1 25 mfd. 25-volt condenser
2 .0001 mfd. Mica Condensers
1 .0005 mfd. Mica Condenser
9 Assorted Resistors
1 ½-meg. Potentiometer with D.P.S.T. Switch
1 ½-meg. Potentiometer without switch
1 Padder
1 "Ensign" Oscillator Coil
1 "Ensign" Aerial Coil
4 Valve Sockets

Sundries: Hook-up Wire, Nuts and Bolts, Clips, Mounting Strip etc.

Cat. No. AK2068 .. .. **£7/5/-**
Without Batteries, Speaker or Cabinet
Cat. No. AK2068A—WITH BATTERIES, BUT WITHOUT SPEAKER AND CABINET **£9/2/-**
Cat. No. AK2068B—COMPLETE WITH "ROLA" 6H SPEAKER AND BATTERIES **£10/17/9**
Cat. No. AK2068C—COMPLETE WITH SPEAKER, BATTERIES AND VENEERED CABINET .. **£14/7/6**



FLUORESCENT LIGHTING IN N.Z.

(With acknowledgments to the "Mazda" and "Osram" Agents for their assistance.)

In the last few years there has been greater development in the design of electric light sources than ever before. In particular, there has been a concentration of effort on the possibilities of electric discharge through gases, which have resulted in many new types of lamps. Discharges through mercury and sodium vapours, through neon and carbon-dioxide gases; discharges with high and low gas pressures at high and low voltages, have followed one another in such rapid succession that fitting designers have been much occupied to exploit to the full the individual advantages of each lamp.

One of the most recent of these is the low-voltage fluorescent discharge tube. This is a natural outcome of the work pioneered in England and America long before the war, and which resulted in high-voltage fluorescent tubes, where a discharge in the vapour or gas (generally mercury or neon) produces ultra-violet radiation, which excites a luminescent coating on the inner walls of the tubes. High efficiencies and a wide range of colours are thus obtained, and many installations have been erected both for exterior display (where such tubes are often still called "neon" sign lamps) and for interior lighting, where they have been woven into attractive shapes by skilled glass workers, and where combinations of colours give them an interest and attraction all their own.

Comparatively little has been done on the design of fittings for these tubes. Their brightness is low and generally no diffusing material is required to make them comfortable to look at; they can be made so attractive that additional decoration is unnecessary.

Even in industry, bare tubes are found satisfactory. Their low intensity makes them suitable even at comparatively low mounting heights. Their higher efficiency and lower heat production aid the maintenance of constant temperature and the avoidance of local "hot-spots".

There is no doubt that such tubes will play an important part in lighting in the future, but, for the present, they have been displaced in this country by a low-voltage tube working on a similar principle. This tube, available at present in only one form and with colour-rendering properties similar to "daylight"* seems to be regarded by many as the panacea to all our lighting ills, almost, indeed, as the "ultimate" in lamp design. It is a remarkable tube, giving an average luminous efficiency about twice that of an ordinary general lighting service tungsten filament lamp, and has already found many valuable uses.

RADIANT HEATING

In all practical light sources the light is accompanied by heat, and those who work under high illumination often find the heat very uncomfortable. Particularly severe examples are the cinema, studio set and stage, where intensities of several hundreds of foot-candles are common, but even in more ordinary walks of life, heating due to artificial lighting can be unpleasant. The 5ft. tube is excellent in this respect, because the radiant heat for a given illumination from 5ft. tubes is of the order of a quarter of that from tungsten filament lamps. The effect of this can only be assessed by working for long periods under tungsten and fluorescent tubes, but the difference at high illumination can be so great that operators have been known to ask whether the fluorescent tube had a refrigerative quality.

PRESENT APPLICATIONS OF TUBES

The most prominent application of these tubes up to the present has been in factories and shops. The low brightness of the tube is of great value for low mounting because the glare effect is comparatively small, both for direct light and reflections from shiny surfaces; the low brightness of the fluorescent tube often gives much easier seeing conditions on polished surfaces than does local tungsten lighting. However, it is still very important to shield the tube from the worker's eyes (in their normal working position) as far as possible. A sustained view of the bare tube is undesirable.

Psychological points, also, are of much greater importance than many people imagine. As an example, in a factory lighted with local fittings, the upper parts of the walls and the ceilings tend to be dark and so give an unpleasant tunnel effect which is depressing to the workers. This can be avoided either by using special fittings to light the roof and walls, or by using trough fittings with open tops so that some light escapes upwards.

As explained, it is necessary to have some type of fittings around the tube because of the reflectivity of the walls, etc., in factories, but this does not necessarily apply to office premises. In these and similar rooms bare tubes have been used effectively. The decorations and general fittings in an office can be kept in far better condition than in a factory.

During the wartime period the 5ft. 80-watt tube was used extensively, but its popularity is now greatly slipping away in favour of the 4ft. 40-watt tube, which is half the wattage, yet its efficiency is almost three-quarters that of the larger tube.

Here is some data on the two Tubes which are most popular at the present time:—

5ft., 80-watt type:
Diameter of Tube, 1½in.
Approximate output in lumens, 2,800.

4ft., 40-watt type:
Diameter of Tube, 1½in.
Approximate output in lumens, 2,100.

The life of both these Tubes is in the vicinity of 2000 hours.

FLUORESCENT CHEMICALS

To obtain the various colours in fluorescent lighting, several chemical powders are used. The phosphor used to give these colours is listed below:—

Phosphor		General Colour
Calcium Tungstate	.. ..	Blue
Magnesium Tungstate	..	Blue-white
Zinc Silicate	..	Green
Zinc Beryllium	..	Yellow-white
Cadmium Silicate	..	Yellow-pink
Cadmium Borate	..	Pink
360 BL phosphor	..	Blue ultra

HOW TO DECIDE ON FLUORESCENT LIGHTING

We have worked out a simple equation so that a prospective user of fluorescent lighting can work out the number of tubes required for a room, office, factory or wherever this lighting is desired. The following formula determines the number of foot candles in comparison with the size of tube and the size of the room or office in which the tubes are to be installed:—

$$\text{Foot Candles} = \frac{\text{Lumens} \times .5}{\text{Area of room} \times 1.43}$$

Lumens equals the output of the tube (this is taken to be 2,800 in the case of a 5ft. 80-watt tube or 2,100 for the case of a 4ft. 40-watt tube). .5 is taken as the co-efficient of utilisation factor. This varies considerably from .39 to .70, but we have determined .5 as the average. Area equals area of room in square feet. 1.43 is the depreciation factor.

An example would be as follows:—

If a 5ft. tube was to be used in a room 10ft. × 10ft. the equation would work out something like this:—

$$\text{Foot Candle} = \frac{2{,}400 \times .5}{100 \times 1.43}$$

This would be equivalent to approximately 8 foot candles. The technical committee of the Illuminating Engineering Society has issued a small table indicating the number of foot candles for the various classes of work.

Recommended Foot Candles		Class of Task
3	..	Casual observation where no specific work is performed.
4–5	..	Work of simple character not involving close attention to fine details.
7–8	..	Less exacting visual tasks such as general office, large assembly work and class rooms.
10	..	Visual tasks such as reading, writing, detailed office work and sewing of light goods, retail shops.
15	..	Prolonged critical visual tasks such as proof-reading, typesetting, drawing, reading, fine machine work, fine assembling, sewing on dark goods, large stores.
20–25	..	Severe and prolonged visual tasks such as fine engraving, sewing of dark goods and discrimination or inspection of fine details of light contrast.

FLUORESCENT LIGHTING IN THE FUTURE

In conclusion, the temptation to consider the future development and influence of fluorescent lighting can hardly be resisted; the possible tube developments and the range of applications are so considerable that he would be an unusual engineer or designer who did not at some time turn his thoughts to what may come. In doing this we should not think only of the 5ft. and 4ft. tubes, or even of low-voltage tubes, for there is every reason to believe that when manufacturing recommences in earnest, the high-voltage tube, which developed so rapidly pre-war, will come into its own once again. This is the trend in America, where the success of low-voltage fluorescent tubes has stimulated interest in the high-voltage types which are now becoming more prevalent since the cessation of hostilities.

The day should not be far distant when lighting in your home, built-in fluorescent lighting, can be "tailor" made.

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* True daylight varies widely in colour; the 4ft. tube corresponds approximately to noon sunlight.

This Crystal Set Works a Loudspeaker

(Abridged article from *Hobbies Illustrated*)

MANY readers, upon noticing this heading, will probably burst into derisive laughter. However, it represents the result of weeks of experimental work. The set described and illustrated will work a loudspeaker. At our location three stations could be clearly heard, and loudest being just audible in an adjoining room.

THE secret lay firstly in using a modern super-sensitive permag speaker and secondly in getting the last ounce of efficiency from the crystal circuit and using the best available crystal. As the diagram shows, this means a simple circuit with the least losses, so it is only recommended for localities where the stations are not too far away (within 4 or 5 miles) and are sufficiently far apart in frequency to avoid interference.

Even so, don't expect the volume to rattle the flies off the lampshade, or even to approximate the output from a small portable; remember, a crystal set can't amplify and you can only get what comes down the aerial, less circuit losses. Results are best during the quiet of night, so with a good aerial (60ft. at least, outside, high up) and earth, this set is very satisfactory as a bedside wireless, and when placed alongside the pillow on a table the voices and music come through quite clearly, yet soft enough not to annoy other members of the family.

THE TUNING COIL

Using a piece of coil former 1¼in. diameter by 3in. long, wind on 110 turns of approximately 30-gauge S.W.G. enamelled or cotton-covered wire, starting about ¾in. from the bottom, to clear the mounting brackets. Make a tap at the 10th turn and then every 5 turns up to the sixtieth turn or up to the eightieth if you haven't "had it" by then! A simple way to make the tap is to bare half an inch of the wire, loop it and twist it up, then fix it with a drop of solder. "Stagger" the taps about half an inch on the former to help in connecting and avoiding shorts.

The little angle brackets supplied with each kit are fixed to the coil with ⅛in. Whitworth brass bolts and nuts, and to the baseboard with short screws.

THE CRYSTAL

Quite some time was spent trying the various types, and we found that while the catswhisker type could give very loud signals, the sensitive spots were few and far between, and the catswhisker would jump off with the least provocation. However, as there are no phone cords to jerk the set round, they are practical and those who must use this type can get a good imported crystal.

However, the best all-round type is unundoubtedly the "Red Diamond" semi-permanent detector, where a special second crystal takes the place of the catswhisker, and the two are held firmly by a spring.

A DE-LUXE CRYSTAL

Some of you wealthy fellows can try the new Sylvania 1N34 crystal diode, reputed to be the "loudest crystal ever" by American enthusiasts. Our depleted pocket could not stand the required £1 or so, but we understand that they have extremely small losses and need no polarising, so ought to be highly suitable for our purpose.

IMPORTANT

When adjusting any kind of double crystal always pull apart the crystals before moving by means of the arm. Always keep them from scraping, i.e., never rotate the arm or move it about with the crystals touching, but pull outwards, move or turn it, and place directly back without any twisting or scraping.

THE CHASSIS

The chassis consists of a front and back strip cut from ⅛in. plywood as shown in Fig. 3, screwed to a base measuring 6⅞ x 3½in. The .0005 mfd. variable tuning condenser, on-off switch and detector, are mounted on the front strip, as seen by the top plan in Fig. 3.

Having fitted the four terminals to the back strip, screw the coil down and wire it in, then wire the rest according to Fig. 2.

Check the circuit and see that it is all right. Do not try to follow the wiring off Fig. 3 just copy the lay-out, as the drawing is actually of a different circuit we were experimenting with and we used it to avoid making a fresh one! For the connections use Fig. 2.

THE SPEAKER

The set is designed for a 6in. Rola permag. which is an exceptionally sensitive type, with a 15,000 ohm matching transformer (anything from 10,000 ohms will do). We have also tried an 8in. Rola with equally good results.

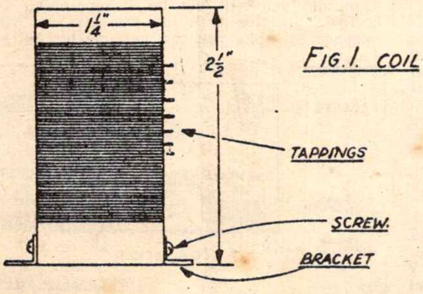


FIG. 1. COIL.

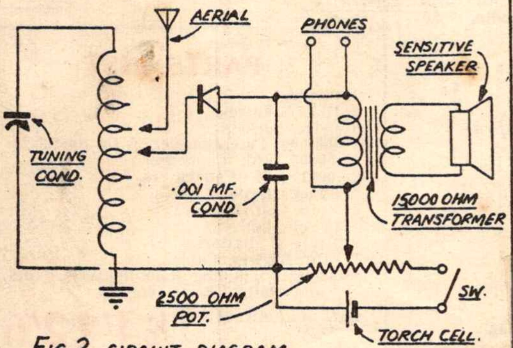
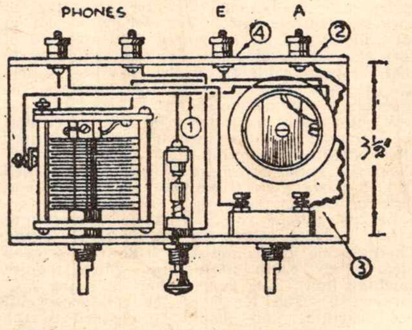


FIG. 2. CIRCUIT DIAGRAM.

AERIAL AND EARTH

As we have said before you need a good aerial to catch all the signal you can. Use about sixty feet, up to a hundred feet, and as high as possible. Make it about 50ft. long, of bellwire or similar—you can get nylex-covered which is cheap and efficient. If the aerial to the house set runs near your window, you can make a connection to it.



The earth must be good—connect to a water-pipe (NOT a gas-pipe) near where it runs underground if possible, or drive a pipe into the earth for 2 or 3 feet, fill with salt or a few copper-sulphate crystals and moisten. Drill for a screw to make a good connection, or use a commercial earth clip.

OPERATING

Set the tuning dial to the middle of its range and adjust the crystal until you hear a station, tune it in and vary the potentiometer until the signal is best. Reverse the battery leads if there is no improvement.

Try the aerial and crystal leads on the various taps (the same, and different ones, independently) until you have the best compromise between the strength and lack of interference. Re-tune each time you alter a tap. Furthermore, don't bend the taps over much, as breakage of coil-wire might ensue, occasioning much wrath, which, as we all know, is bad for the system.

PARTS LIST

- 1 .0005 mfd. Tuning Condenser.
- 1 .001 Fixed Condenser.
- 2oz. 30-gauge Enamelled Wire.
- 1 Red Diamond Crystal Detector.
- 1 2500 ohm Potentiometer.
- 1 1¼in. x 3in. Coil Former.
- 1 S.P.S.T. Toggle Switch.
- 4 Terminals.
- 2 Knobs.
- 1 Torch Cell.
- 1 Baseboard.
- 2 Panels.
- 2 Crocodile Clips.
- **Sundries:** Hook-up wire, lugs, screws, etc.

KIT OF PARTS
(As above)

Cat. No. AK2064— 28/11

"Rola" 6in. Model 6J Speaker (Extra). £2/3/-

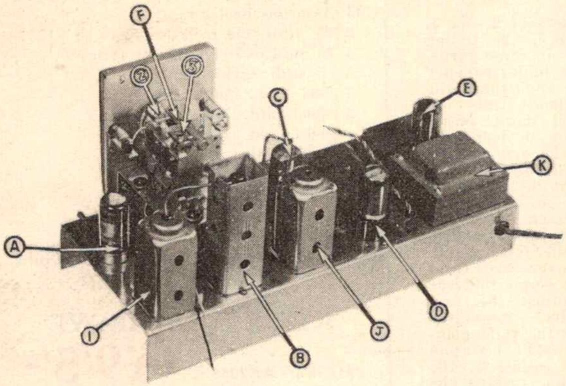
CONNECTIONS TO BE MADE

COIL **Under Chassis View**	LUG 1	To centre lug of volume control. To one end of .0001 condenser. To blue lead of audio transformer.
	LUG 2	To fixed plates of tuning condenser. To one end of the .0001 condenser and 1 meg. resistor which are twisted together.
	LUG 3	Earthed to chassis.
	LUG 4	To length of wire which is used for aerial connection.
	LUG 5	To lug 3 of valve socket "A".
VALVE SOCKET "A" **Under Chassis View**	LUG 1	No connection.
	LUG 2	Earthed to chassis.
	LUG 3	To lug 5 of coil socket. Left-hand lug of volume control.
	LUG 4	Has length of wire soldered to it which goes to B+15.
	LUG 5	To the twisted ends of the .0001 condenser and 1 meg. resistor.
	LUG 6	No connection.
	LUG 7	To lug 7 of socket "B". To one lug of the switch attached to the back of the volume control.
	LUG 8	No connection.
VALVE SOCKET "B" **Under Chassis View**	LUG 1	No connection.
	LUG 2	Earthed to chassis.
	LUG 3	To one lug on speaker terminal strip.
	LUG 4	To other lug on speaker terminal strip and red lead of audio transformer.
	LUG 5	To green lead of audio transformer.
	LUG 6	No connection.
	LUG 7	To lug 7 of socket "A" and other green or black lead of audio transformer.
	LUG 8	No connection.
TUNING CONDENSER		Bolted to chassis. Fixed plates to lug 2 of coil socket.
VOLUME CONTROL	LEFT LUG	To lug 3 of socket "A".
	CENTRE LUG	To lug 1 of coil socket.
	RIGHT LUG	No connection.
SWITCH ON BACK OF VOLUME CONTROL		One lug has lead going down through the hole in chassis and out of the A— hole at back of chassis. Other lug to lug 7 of socket "A".
AUDIO TRANSFORMER	BLUE LEAD	To lug 1 of coil socket.
	RED LEAD	To lug 4 of socket "B".
	GREEN LEAD	To lug 5 of socket "B".
	BLACK or other GREEN LEAD	To lug 7 of socket "B".

1 MEG. RESISTOR and .0001 CONDENSER		These will be considered as a single unit as they are placed together and have their ends twisted and soldered. One pair of ends go to lug 5 of socket "A". The other pair go to lug 2 of the coil socket.
.0001 CONDENSER	ONE END	Earthed to chassis.
	OTHER END	To lug 1 of coil socket.
SPEAKER TERMINAL STRIP	ONE LUG	Has lead from lug 3 of socket "B" soldered to it.
	OTHER LUG	Has lead from lug 4 of socket "B" and lead from B+18 soldered to it.
BATTERY LEADS		These are fed through the five small holes at the back of chassis.
	B+18 LEAD	Connects up to the same lug on the speaker terminal strip as that to which lug 4 of socket "B" is connected.
	B+15 LEAD	Connects to lug 4 of socket "A".
	B— LEAD	Is earthed to chassis.
	A+ LEAD	Is earthed to chassis.
	A— LEAD	Connects to one lug of switch attached to back of volume control. There is a hole directly below the control through which to feed the lead.
BATTERIES		You will receive three batteries with your kit. The large round one being the "A" battery and the two flat batteries when joined together the "B" battery. The centre connection on the round cell is A+, the outside connection is A—.
		The B battery is made up by connecting a short wire between —9 on one battery and + on the other battery. This now leaves a + terminal free which becomes B+18 and a free —9 terminal which becomes B—. B+15 is the second terminal away from B+18. It has —3 marked on it but don't worry about that. Ignore all other markings on the batteries.
	AERIAL LEAD	This feeds through a hole in the side of the chassis and connects to lug 4 of coil socket.
	EARTH LEAD	Feeds through other hole and is earthed to suitable lug.

and mounted in place. A glance at diagram "D" will indicate the positioning of the various parts. The coils "G" and "H" are attached to the chassis by a small bolt.

Now first of all secure the tuning condenser "F" in place, securing a couple of solder lugs down at the same time, and then the two coils, "G" and "H," should be mounted. Now, with the aerial coil "G," you will find a tiny condenser. Solder this across the yellow and green lugs. Solder about 2ft. of pushback wire to the yellow lug—this will be used as your aerial lead. Now on each of the bottom lugs of the two-gang condenser "F," solder two leads of sufficient length to feed through the respective holes and connect to the two coils. The lead from the front section going to green lug of the aerial coil "G," and the lead from the rear section going to the green lug of oscillator coil "H." Now from these lugs we have to take other leads which feed through the main chassis and connect up underneath there. A good idea is to use leads having the same colour as the lug to which each is to be soldered. That is, green lead to green lug, yellow lead to yellow lug, and then there will be no mistake. Let us get cracking.



To the green lug of aerial coil "G," solder about 4in. of green hook-up wire. Earth the red lug to nearest solder lug. Now to the black lug. Solder the insulated end of 4, the .1 condenser, also one end of 18, the 100,000 ohm resistor. Now earth the other end of 4. Solder about 8in. of wire to the free end of 18. Turn to the oscillator coil, "H" now. Solder about 4in. of green lead to the green lug. Now about 6in. of red lead to the red lug, also the same length of yellow lead to the yellow lug. Have a look at 1, the padder condenser, that is the one with the porcelain base. Attach this so that the adjusting screw may be seen through the small hole in the top of the sub chassis. Earth one lug and take a short lead to the black lug of "H," the oscillator coil from the other lug.

Let us now mount the sub chassis in place. making sure to push the loose leads through the holes in the top of the main chassis and when securing in place, put a solder lug under each securing nut. Take the green lead of the aerial coil "G" and solder onto pin No. 6 of "A," the ECH21 socket. Solder the lead from 18, the 100,000 ohm resistor onto the grid return lug of "I," the first I.F. transformer. Do not have any of these leads longer than necessary. The green lead from oscillator coil "H" connects to one end of 5, the .00005 condenser, the other end of 5 going to pin No. 4 of "A," the ECH21 socket. Cut the condenser leads short so as not to contact any other parts. Now solder the yellow lead from the oscillator coil "H" onto pin No. 3 of "A" and the red lead from "H" onto one end of 20, the 25,000 ohm resistor, also to the insulated lug of 6, the .1 condenser, the other end of 20 being connected to the B+ lug of "I" the first I.F. transformer. Do not earth 6 yet!

Now solder a short lead from pin No. 4 to pin No. 7 of "A," also solder one end of 19, the 50,000 ohm resistor to pin No. 7. Earth the other end of 19. No. 2 pin of "A" now, a lead from there to the plate lug of "I," the first I.F. transformer. A lead now from pin No. 5 of "A" to pin No. 4 of "B," the 6U7G socket. Before attaching, however, to this No. 4 pin of "B," connect also the lug on the insulated end of 7 the .1 condenser and one end of 21 the 10,000 ohm, 2-watt resistor. Now take the free ends of 6 and 7, the .1 condensers, and earth onto a solder lug. Now back to the B+ lug of "I," the 1st I.F. tranny, solder a lead from there to the B+ lug of "J," the 2nd I.F. tranny, also to this B+ lug of "J." Solder the free end of 21, also one end of 22, the 250,000 ohm resistor and a 4½in. lead.

Now to socket "D," the 6V6GT socket. Onto pin No. 4 solder the following: The other end of the 4½in. lead, the positive (+) end of 16, the 16 mfd. condenser, and one lead of "L," the filter choke. Earth the negative (—) end of 16. To pin No. 8 of socket "E" the 6X5GT socket solder the positive (+) end of 17 the other 16 mfd. condenser and the other lead of "L," the filter choke. To pin No. 2 of socket "D" solder one end of 27 the 400 ohm resistor. This pin should be earthed. To the No. 8 pin, solder the free end of 27, plus the positive (+) end of 15 the 25 mfd. condenser. Earth the negative (—) end of 15 to the nearest solder lug.

Take a look now at 28, the tone control. The right-hand lug (that is the lug on the right when you look at the back of the control and the lugs point upwards) is earthed to the chassis. From your shielded lead, cut two lengths about 13in. each. See that the shielded braid is pushed back far enough to prevent it shorting onto the wire. Now solder one end of each of these two leads onto the centre and left-hand lugs. Run these two leads along the front of the chassis and then at right angles across the chassis to socket "D." The lead from the left-hand lug going to pin No. 5 and the lead from the centre lug to pin No. 6. It is advisable to solder these two shielded leads together at two or three points along the way. Also near the front of the chassis you should have a couple of solder lugs under the nuts which secure the sub chassis. Earth the braid to these two lugs.

Now 29—the volume control. Earth the left-hand lug to the nearest solder lug. Now solder one end of your shielded wire onto the right-hand lug, lead across the chassis to the diode return lug of "J," the 2nd I.F. transformer and solder on together with one end of 9, the .0001 mica condenser. Earth the other end of 9, also the braid to the solder lug under the nut which secures the rear section of the sub chassis. Solder a lead between the plate lug of 2nd I.F. trany "J," and pin No. 3 of 6U7G socket "B." Now still on "J," solder a lead onto the diode lug and solder the other end onto pin No. 4 of "C," the 6Q7GT socket, together with one end of 10, the .00005 mica condenser. Now onto pin No. 5 of "D" solder one end of 13, the .1 paper condenser, the other end solders with 11 the .0005 mica condenser and the free end of 22, the 250,000 ohm resistor onto pin No. 3 of socket "C." Earth the other end of 11. Do not have these leads longer than necessary. Nip off any leads which are too long. Still with socket "C," connect the following onto pin No. 5: One end of 23 and 24, the 1 meg. resistors, also the free end of 10. Now pin No. 6. Cut about 7in. of shielded wire and solder one end, together with an end of 12, the .002 condenser, and 25, the 10 meg. resistor, onto this pin. See that the braid does not short onto any of the wiring. Push this lead up through the hole provided in the chassis. Later on a grid clip is soldered to this end to go onto the top of the 6Q7GT valve. Solder the other end of 12 onto the centre lug of 29, the volume control. Earth the free end of 25.

Have a look at 26 which is a 33 ohm resistor. As we do not possess such a value, we have substituted two resistors, one 100 ohm, and the other of 50 ohm. These are placed side by side and the ends are twisted together, thus making a single unit. Now solder one end of this unit together with one end of your hook-up wire onto the negative (—) lead of 17. Be sure you cut the resistor and condenser leads as short as possible. Earth the free end of 26, the 33 ohm unit. Now lead the hook-up wire which has one end attached to the negative lead of 17, over to the C.T. lug of "K," the power transformer. Cut off and solder the two ends onto this lug. Now lead the hook-up wire along the chassis, keeping it as flat as possible and take it over to 23. Cut the pigtail of 23 as short as possible, leaving only enough to solder the lead to. Now with 24, the other 1 meg. resistor, also cut the pigtail short and solder one end of your hook-up wire to it and lead the wire across to the grid return lug of "I," the 1st I.F. transformer. Now before soldering to this lug, also attach the insulated end of 8, the .1 condenser. Earth the other end of this condenser. Now across pin No. 3 of "D," and pin No. 6 of "D" solder 14, the .0005 mica condenser.

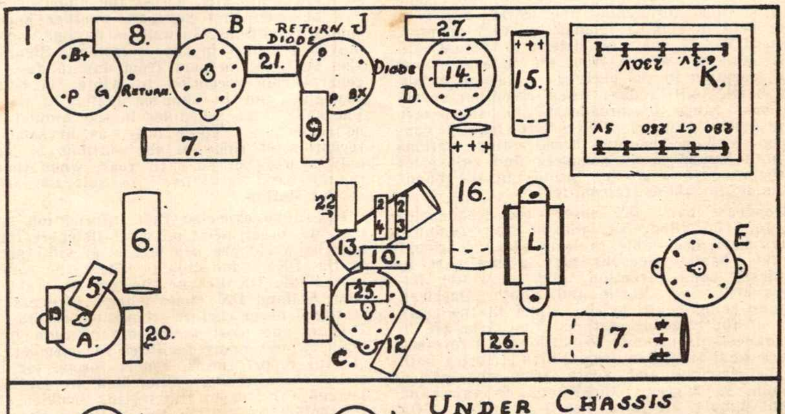
Now wire up your power flex to the 230v. lugs on the transformer "K." Be sure to use a rubber grommet in the hole where the flex comes through the rear of the chassis. This should complete the under chassis wiring.

Fit the dial now. This needs little explanation. You will see the tuning shaft is fitted to the hole between the volume control and and tone control, and a cord feeds up from here to the dial drum which mounts onto the tuning condenser shaft.

We come now to the wiring of the dial lights. Having got your dial completely set up, solder the end of the hook-up wire which is poking up from the chassis onto one lug of the holders, then continue a lead across the back of the dial to one lug on the other holder. The other lug on each should be bent back and soldered to the holder clip. Screw the lights in and fit the holders in place.

You still have a shielded lead doing nothing in particular, so plug the 6Q7GT valve into its socket which is "C." Estimate the length of lead required to go to the top cap of this valve, see that the braid will not foul the wire and solder on the grid clip. Do not solder when the clip is on the valve.

Solder about 18in. of black lead onto a suitable solder lug and lead to the rear of the chassis. This will be used as the earth lead. The best plan now is to thoroughly check all



UNDER CHASSIS VIEW "C"

CONNECTIONS TO BE MADE

ECH21 Socket	**A**	Centre lug to pin 1 of "A" and earthed.
		Pin 1—To centre lug and earthed.
		Pin 2—To plate pin on first I.F. trany "I".
		Pin 3—To yellow lug on oscillator coil "H".
		Pin 4—To one end of .00005 condenser "5", also to pin 7 of "A".
		Pin 5—To pin 4 of "B".
		Pin 6—To green lug on aerial coil "G".
		Pin 7—To pin 4 of "A", also to one end of 19.
		Pin 8—To pin 7 of "B".
6U7G Socket	**B**	Pin 1—No connection.
		Pin 2—Earthed to chassis with pins 5 and 8.
		Pin 3—To plate pin on 2nd I.F. trany "J".
		Pin 4—To pin 5 of "A", also to one end of 7 and 21.
		Pin 5—Earthed to chassis with pins 2 and 8.
		Pin 6—No connection.
		Pin 7—To pin 8 of "A" and pin 7 "D".
		Pin 8—Earthed to chassis with pins 2 and 5.
6Q7GT Socket	**C**	Pin 1—Earthed to chassis with pins 2 and 8.
		Pin 2—Earthed to chassis with pins 1 and 8.
		Pin 3—To one end of 11, 13 and 22.
		Pin 4—To one end of 10, and diode pin on 2nd I.F. Trany "J".
		Pin 5—To one end 23 and 24 and other end of 10.
		Pin 6—Used as junction for one end of 12 and 25, also shielded lead which goes up through chassis to cap of valve.
		Pin 7—To pin 7 of "D", also to dial light holders.
		Pin 8—Earthed to chassis with pins 1 and 2.
6V6GT Socket	**D**	Pin 1—No connection.
		Pin 2—Earthed to chassis.
		Pin 3—To one end of 14, also to one speaker lead.
		Pin 4—To other speaker lead, also one lead of "L" positive (+) end of 16 and B+ lug on 2nd I.F. trany "J".
		Pin 5—To one end of 13, also through shielded lead to left-hand lug of tone control 28.
		Pin 6—To one end of 14 also through shielded lead to centre lug of tone control 28.
		Pin 7—To pin 7 of "B" and "C", also to 6.3v. lug of "K".
		Pin 8—To positive (+) end of 15, also one end of 27.
6X5GT Socket	**E**	Pin 1—No connection.
		Pin 2—To one 5v. lug on "K".
		Pin 3—To one 280v. lug on "K".
		Pin 4—No connection.
		Pin 5—To other 280v. lug on "K".
		Pin 6—No connection.
		Pin 7—To other 5v. lug on "K".
		Pin 8—To positive (+) end of 17 also one lead of "L".
2-Gang Condenser	**F**	Lead taken from bottom lug of fixed plates of section nearest dial, to the green lug of "G".
		Lead taken from bottom lug of fixed plates of rear section, to the green lug of "H".
Aerial Coil	**G**	The small condenser supplied is soldered between the green and yellow lugs.
		Lead taken from yellow lug and used as aerial connection.
		Red lug earthed to chassis.
		Green lug—A lead to pin 6 of "A", also to fixed plates of front section of "F".
		Black lug to one end of 4 and 18.
Oscillator Coil	**H**	Yellow lug—A lead to pin 3 of "A".
		Red lug—A lead to one end of 6 and 20.
		Green lug to fixed plates of rear section of "F", also lead to one end of 5.
		Black lug to one lug of 1.
1st I.F. Transformer	**I**	Green (grid) lead from top, fits on to cap of 6U7G valve.
		B+ lug has lead to B+ lug of "J", also to 20.
		Plate lug to pin 2 of "A".
		Grid return lug to one end of 8, 18 and 24.
2nd I.F. Transformer	**J**	B+ lug has lead from B+ lug of "I", one end of 21 and 22, also lead from pin 4 of "D", all soldered to it.
		Plate lug to pin 3 of "B".
		Diode lug to one end of 10 and pin 4 of "C".
		Diode return lug to one end of 9, also through shielded lead to right-hand lug of 29.
Power Transformer	**K**	230v. lugs to power flex.
		6.3v. lugs—one lug is earthed to chassis, the other lug has a lead going to pin 7 of "D" from which a lead goes to pin 7 of "C" and up through chassis to connect to dial light holders. Also from pin 7 of "D" a lead to pin 7 of "B", continuing onto pin 8 of "A".
		5v. lugs—one lug to pin 2 of "E", the other lug to pin 7 of "E".
		280v. lug to pin 3 of "E", other 280v. lug to pin 5 of "E".
		C.T. lug to negative (—) end of 17 and one end of 23 and 26.
Filter Choke	**L**	One lead to pin 8 of "E".
		Other lead to pin 4 of "D".

1950-CIRCUIT REVIEW-1951

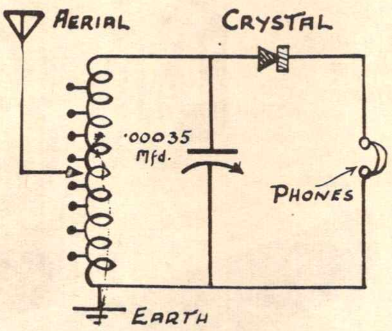
"OXFORD" CRYSTAL SET

Though progress is being made rapidly in the radio world there will always be a place for the Crystal Set, that reliable and compact little receiver that works "for a song."

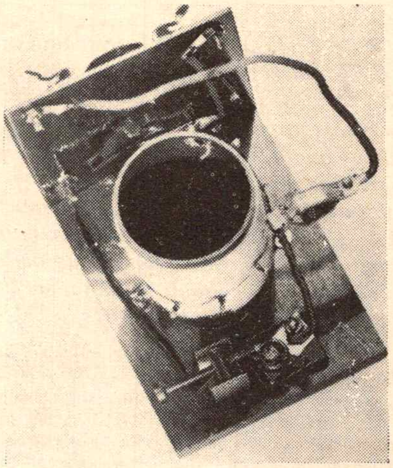
The "OXFORD" CRYSTAL SET illustrated may be constructed with ease by any schoolboy.

Though there may be one or two multi-valve receivers in the household, the crystal set is still practicable, for while mother and father may not wish to listen to the "big" radio, junior can always dash away and listen to his serials on the headphones without disturbing other members of the family.

However, this set is not recommended for use further than 30 to 40 miles away from a strong station. There have been instances where crystal sets have brought in stations up to 200 miles away and sometimes even overseas, but this must be considered an exception to, and not the general rule.



Full Constructional Details Supplied With Each Kitset



COMPLETE KIT
(Without Headphones)
Cat. No. AK2006 .. .. **15/11**

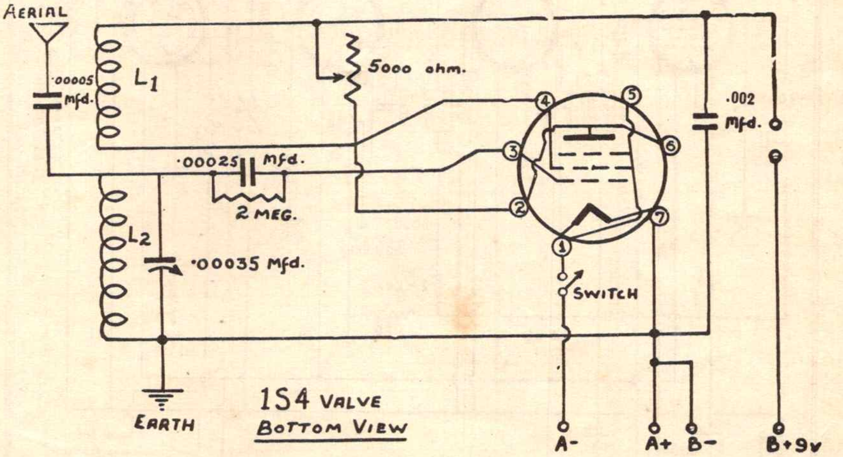
"THE POPULAR ONE"

Once again we bring before you THE "POPULAR ONE," the neat and compact little receiver that has proved so popular in recent years. It's the LITTLE chap with the BIG heart!

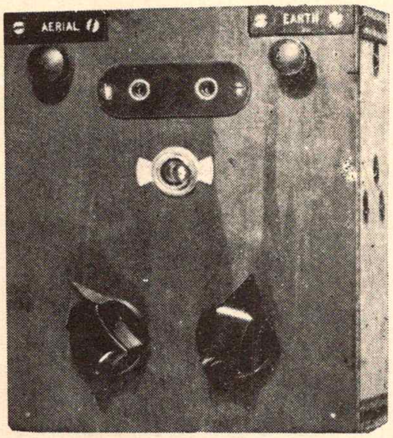
A Simple Circuit — Brilliant Performance

We constructed the trial set in a small wooden cabinet 5½in. x 4⅝in. x 2¼in. deep, and would suggest that you do likewise. A cabinet any smaller than this would tend to cram the components and probably impair the performance.

It's easy to build and gives exceptionally good results. Uses a miniature tube. It's small, and may in fact be carried in the average size coat pocket.



1S4 VALVE BOTTOM VIEW



PARTS LIST

1 Midget valve socket. 1 1S4 valve.
1 .00035 mica spaced condenser.
2 Small pointer knobs.
1 Twin tip jack.
1 2 meg. ½ watt resistor.
1 5000 ohm volume control.
1 Switch.
1 only .00025 mica condenser.
1 .00005 mica condenser.
1 .002 condenser.
1 Midget R.F. coil. 2 Fahnstock clips.
6 Penlite cells. 3ft. Pushback wire.
1 1½ v. unit cell. 8 Nuts and bolts.

Complete KIT OF PARTS as above.

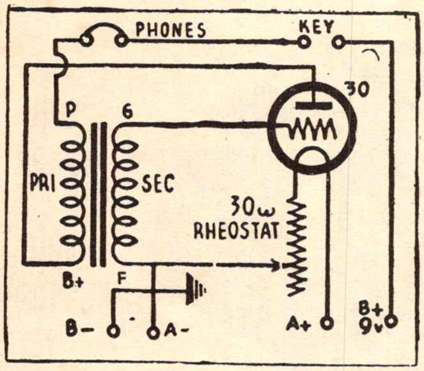
Cat. No. AK2005 (Headphones extra) .. **42/6**

SUITABLE HEADPHONES

Cat. No. AC245—("Brown's") .. **23/6** pair

"Build Your Own" KITS

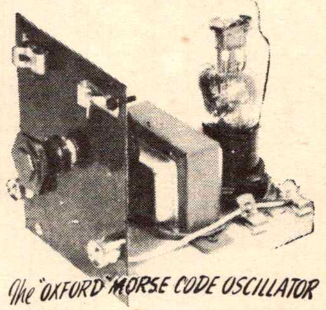
THE "OXFORD" MORSE OSCILLATOR


PHONES
KEY
30
P
6
PRI
SEC
30ω
RHEOSTAT
B+
F
B-
A-
A+
B+
9v

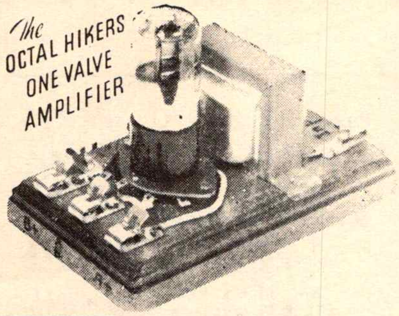
The Morse Code is one of the first things to learn if you have ambitions to become a radio operator or "Ham." The short-wave fan will also get much more fun from his set if he can understand dot dash messages flashing all over the world.

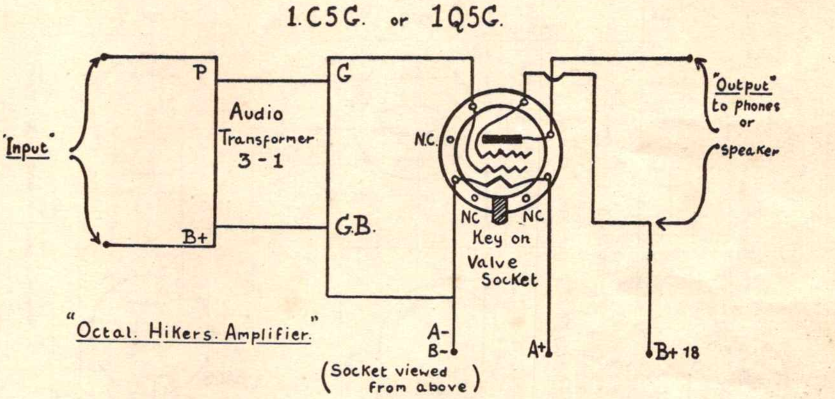
The "Oxford Oscillator" can be constructed within an hour by even a beginner. There's hours of constructive fun and enjoyment in learning the "Code" on this unit.

Complete KIT OF PARTS
(Without Morse Key)
Cat. No. AK2015 .. .. 39/6


The "OXFORD" MORSE CODE OSCILLATOR

THE "OCTAL HIKER'S" AMPLIFIER


The OCTAL HIKERS ONE VALVE AMPLIFIER


1.C5G. or 1Q5G.
"Input"
P
B+
Audio Transformer 3-1
G
G.B.
N.C.
NC
NC
Key on Valve Socket
"Output" to Phones or Speaker
"Octal. Hikers. Amplifier."
A-
B-
A+
B+ 18
(Socket viewed from above)

PARTS LIST

1 1C5GT or 1Q5GT Valve.
1 Octal Baseboard Socket.
1 Audio Transformer.
7 Fahnstock Clips. Hook-up Wire.
1 Baseboard. Solder Lugs.
12 Wood Screws. 1 No. 6 Dry Cell.
2 9-volt C. Batteries.

Complete KIT OF PARTS as above.
Cat. No AK2010 .. .. 45/-

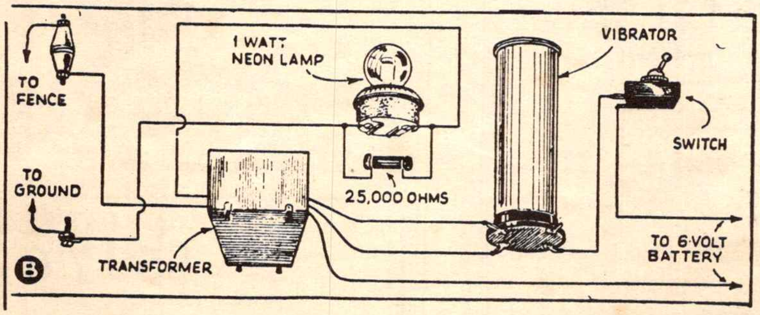
Above is the circuit of an excellent Single Valve Amplifier using an Octal Type Tube. This amplifier may be used in conjunction with any of the Hiker's Series Sets, or for amplifying a crystal set or other small receivers. The input to the amplifier is simply connected to the headphone terminals of the Hiker's or crystal set, etc. A 3 : 1 audio transformer is shown in the diagram, but a 3½ : 1 or 5 : 1 Transformer would do equally as well.

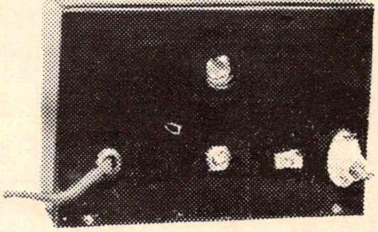
To obtain satisfactory results it is recommended that 18 volts be used on the plate of the valve, although the amplifier may work on a lower voltage. Using the 22½ volt tapping of a 45 volt B battery would be quite satisfactory.

The ideal Amplifier to hook on to your "Hiker's One" to operate a Speaker.

"OXFORD" ELECTRIC FENCE KIT

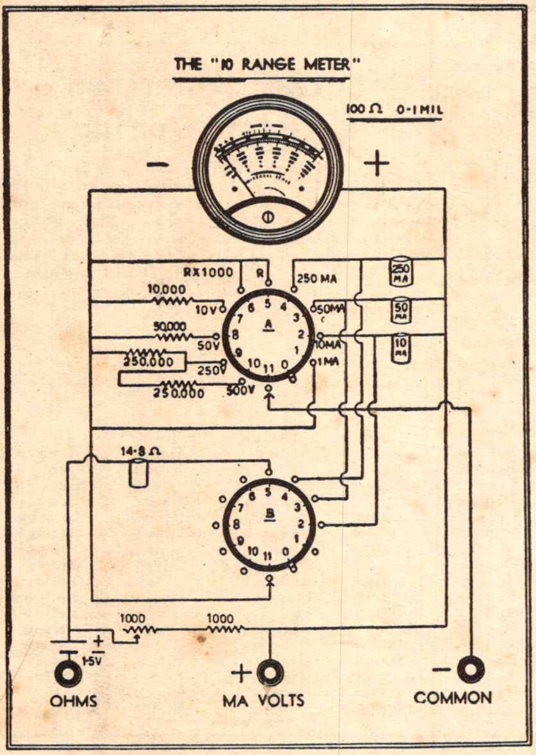
A simply designed ELECTRIC FENCE UNIT, easy to construct and worth its weight in gold to the farmer. It has been proved that a single wire charged with electricity is more effective in keeping livestock in selected fields and keeping intruders out, than the old-fashioned barbed wire fence or board fence, and with this thought in mind and in response to numerous requests, we present the "OXFORD FENCE KIT," as previously mentioned a simply designed and constructed unit.


TO FENCE
1 WATT NEON LAMP
VIBRATOR
SWITCH
TO GROUND
25,000 OHMS
TO 6-VOLT BATTERY
TRANSFORMER
B



Complete KIT OF PARTS
(Including Cabinet)
Cat. No. AK2042 .. £3/15/-

The "10 Range Meter"

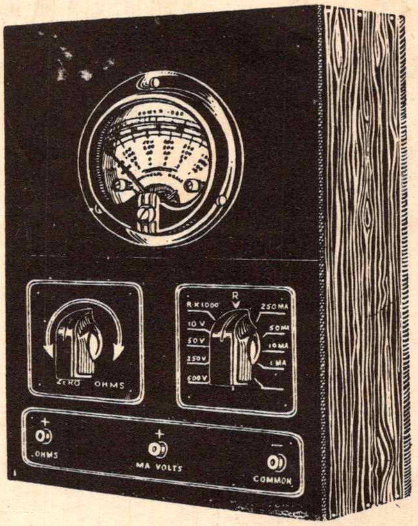

THE "10 RANGE METER"
100 Ω 0-1 MIL
−
+
RX1000
R
250 MA
10,000
10V
50MA
50,000
50V
10MA
1MA
250,000
250V
250,000
500V
A
250 MA
50 MA
10 MA
14·8 Ω
B
1000
1000
1·5V
+
OHMS
+
MA VOLTS
−
COMMON

Considerable time and thought have been devoted to producing a meter kitset which would be simple and inexpensive to build, yet giving reasonably accurate readings. Here is the result.

The circuit is built around a 3in. 0.1 m.a. 100 ohm internal resistance, Palec Meter fitted with an easily read Universal scale.

The complete unit is housed in a wooden cabinet measuring 9in. x 7in. x 2in.

An excellent piece of Test Equipment for the Radio enthusiast.


ZERO OHMS
RX1000
R
250MA
10V
50V
250V
500V
50MA
10MA
1MA
+
OHMS
+
MA VOLTS
COMMON

PARTS LIST

- 1 Palec 0-1 Ma. Meter (with Universal Scale).
- 1 12 Contact 2 bank Switch.
- 2 Pointer Knobs.
- 1 9 x 7 x ⅛in. Bakelite Panel.
- 4 Shunts.
- 5 Resistors.
- 1 1000 ohm Volume Control.
- 3 Banana Sockets.
- 1 Special Wooden Box.
- 3ft. Single Strand Wire.
- 1 4½ volt Battery.
- SUNDRIES: Solder Lugs, Nuts, and Bolts, etc.

COMPLETE KIT OF PARTS AS ABOVE.

Cat. No. AK2041 .. .. £5/12/6

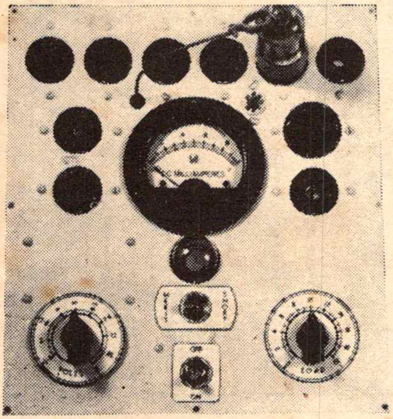
FULL CONSTRUCTIONAL DETAILS WITH EACH KIT.

THE "SIMPLEX UNIVERSAL" VALVE TESTER

In the designing of this versatile valve tester we have kept in mind that the circuit must be simple and inexpensive, yet capable of testing all the many types of valves on the New Zealand market. The **"Simplex Universal"** will test all American types including Octal, Loctal and Miniature, the Philips range, the Mullard and other standard English types.

It's certainly universal and as the name implies is not a complicated unit. It's just the ideal unit for the serviceman, advanced constructor or the "Ham."

Details covering operation, and a suggested chart are supplied with each kit.

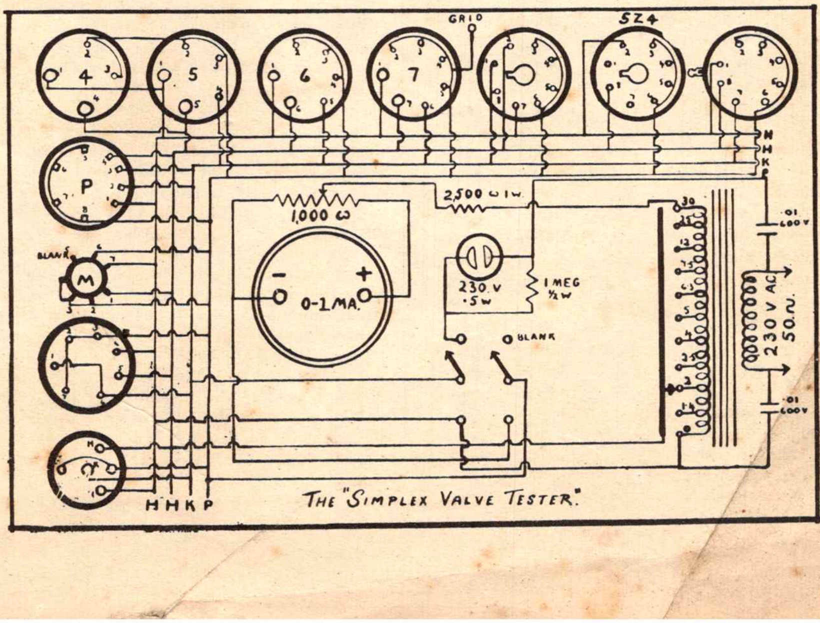


PARTS LIST

- 1 Panel.
- 1 each 4, 5, 6, 7, Loctal, Midget Valve Sockets.
- 2 Octal Valve Sockets.
- 1 each Philips (P), Squash 7-pin, 5-pin Valve Sockets.
- 1 0-1 MA Meter.
- 1 1000 ohm W/W Potentiometer.
- 1 ½ watt Neon Indicator.
- 1 Holder for same.
- 1 Special Transformer.
- 1 10-position Switch.
- 2 .01 Condensers.
- 1 D.P.D.T. Toggle Switch.
- 1 S.P.S.T. Toggle Switch.
- 2 Pointer Knobs.
- 1 yard 3-core Flex.
- 2 Resistors.
- 1 Clip.
- 1 yard Spaghetti Tubing.
- SUNDRIES: Including Nuts and Bolts, Hook-up Wire, Connecting Wire, Grommets, Indicator Markings, etc.

Complete KIT OF PARTS as above.

Cat. No. AK2032 £7/17/6


GRID
5Z4
4
5
6
7
P
BLANK
M
H
H
K
P
2,500 Ω 1W.
1,000 Ω
−
+
0-1 MA.
230 V
·5 W
1 MEG
½ W
BLANK
30
25
12
7·5
6·3
5
4
2·5
2
1·4
·01
600 V
230 V AC
50 ∿
·01
600 V
H H K P

THE "SIMPLEX VALVE TESTER."

AUSTRALASIAN BROADCAST LOG

Compiled by Arthur T. Cushen, 212 Earn Street, Invercargill. (* Proposed stations and power increases.)

Call	Location	Kilocycles	Power Watts.
4QL	Longreach, Q.	540	200
2CR	Cumnock, N.S.W.	550	10,000
3GI	Sale, Vict.	560	7,000
6WA	Minding, W.A.	560	10,000
2YA	Wellington, N.Z.	570	60,000
3WV	Horsham, Vic.	580	10,000
4QR	Brisbane, Q.	590	2,000
7ZL	Hobart, Tas.	600	2,000
2FC	Sydney, N.S.W.	610	10,000
3AR	Melbourne, Vict.	620	10,000
4QN	Townsville, Q.	630	7,000
5CK	Crystal Brook, S.A.	640	7,500
2YC	Wellington, N.Z.	650	*60,000
2BH	Broken Hill, N.S.W.	650	200
2NU	Manila, N.S.W.	660	10,000
2CO	Corowa, N.S.W.	670	7,500
2HR	Lochinvar, N.S.W.	680	300
4AT	Atherton, Q.	680	500
7QT	Queenstown, Tas.	680	300
3YA	Christchurch, N.Z.	690	10,000
4KQ	Brisbane, Q.	690	1,000
6WF	Perth, W.A.	690	5,000
2NR	Grafton, N.S.W.	700	7,000
7NT	Kelso, Tas.	710	7,000
4YZ	Invercargill, N.Z.	720	5,000
2TR	Taree, N.S.W.	720	200
6GF	Kalgoorlie, W.A.	720	2,000
5CL	Adelaide, S.A.	730	5,000
2BL	Sydney, N.S.W.	710	10,000
1YA	Auckland, N.Z.	750	10,000
2NB	Broken Hill, N.S.W.	750	2,000
*6	Moora, W.A.	750	—
4QS	Dalby, Q.	760	10,000
3LO	Melbourne, Vic.	770	10,000
4YA	Dunedin, N.Z.	780	10,000
2KA	Katoomba, N.S.W.	780	1,000
4TO	Townsville, Q.	780	200
4QG	Brisbane, Q.	790	3,500
1YZ	Rotorua, N.Z.	800	10,000
*2	Bega, N.S.W.	800	—
6WN	Perth, W.A.	800	1,000
*2	Glen Innes, N.S.W.	810	—
2DU	Dubbo, N.S.W.	810	200
7BU	Burnie, Tas.	810	200
6GN	Geraldton, W.A.	820	1,000
5RM	Renmark, S.A.	830	2,000
*2	Kempsey, N.S.W.	840	10,000
2CY	Canberra, F. T.	850	10,000
2YZ	Napier, N.Z.	860	5,000
4GR	Toowoomba, Q.	860	500
7HO	Hobart, Tas.	860	500
2GB	Sydney, N.S.W.	870	1,000
1YC	Auckland, N.Z.	880	*10,000
3UL	Warragul, Vic.	880	200
4WK	Warwick, Q.	880	100
6PR	Perth, W.A.	880	500
*4QY	Cairns, Q.	890	2,000
5AN	Adelaide, S.A.	890	2,000
4YC	Dunedin, N.Z.	900	*10,000
2LM	Lismore, N.S.W.	900	500
7AD	Devonport, Tas.	900	300
4QB	Pialba, Q.	910	2,000
3YZ	Greymouth, N.Z.	920	*10,000
2XL	Cooma, N.S.W.	920	500
4VL	Charleville, Q.	920	500
*6	Northam, W.A.	920	—
3UZ	Melbourne, Vict.	930	600
ZJV	Suva, Fiji	930	400
2ZA	Palmerston North, N.Z.	940	*2,000
4RK	Rockhampton, Q.	940	2,000
7ZR	Hobart, Tas.	940	500
2UE	Sydney, N.S.W.	950	1,000
3YC	Christchurch, N.Z.	960	*10,000
3BO	Bendigo, Vic.	960	500
4AY	Ayr, Q.	960	500
1XN	Whangarei, N.Z.	970	2,000
5DN	Adelaide, S.A.	970	500
2ZB	Wellington, N.Z.	980	*10,000
2KM	Kempsey, N.S.W.	980	300
6AM	Northam, W.A.	980	2,000
2GZ	Orange, N.S.W.	990	2,000
3HA	Hamilton, Vic.	1,000	1,000
2XG	Gisborne, N.Z.	1,010	2,000
4CA	Cairns, Q.	1,010	300
4MB	Maryborough, Q.	1,010	300
7EX	Launceston, Tas.	1,010	500
2KY	Sydney, N.S.W.	1,020	1,000
3DB	Melbourne, Vic.	1,030	600
4ZB	Dunedin, N.Z.	1,040	*10,000
5PI	Crystal Brook, S.A.	1,040	2,000
2CA	Canberra, F.T.	1,050	2,000
4SB	Kingaroy, Q.	1,060	2,000
1ZB	Auckland, N.Z.	1,070	*10,000
2RG	Griffith, N.S.W.	1,070	200
6WB	Katanning, W.A.	1,070	2,000
2LT	Lithgow, N.S.W.	1,080	100
4RO	Rockhampton, Q.	1,080	200
7HT	Hobart, Tas.	1,080	500
3LK	Lubeck, Vic.	1,090	2,000
3ZB	Christchurch, N.Z.	1,100	*10,000
4LG	Longreach, Q.	1,100	1,000
6MD	Merredin, W.A.	1,100	500
7LA	Launceston, Tas.	1,100	500
2UW	Sydney, N.S.W.	1,110	1,000
4BC	Brisbane, Q.	1,120	1,000
2YD	Wellington, N.Z.	1,130	*5,000
2AD	Armidale, N.S.W.	1,130	200
3CS	Colac, Vict.	1,130	200
6PM	Perth, W.A.	1,130	500
2HD	Newcastle, N.S.W.	1,140	500
2WG	Wagga, N.S.W.	1,150	2,000
3XC	Timaru, N.Z.	1,160	2,000
4QA	Mackay, Q.	1,160	2,000
5	Mt. Gambier, S.A.	1,160	—
2NZ	Inverell, N.S.W.	1,170	2,000
2XM	Gisborne, N.Z.	1,180	100
3KZ	Melbourne, Viet.	1,180	600
2CH	Sydney, N.S.W.	1,190	750
2XA	Wanganui, N.Z.	1,200	2,000
5KA	Adelaide, S.A.	1,200	500
2GF	Grafton, N.S.W.	1,210	200
3YB	Warrnambool, Vic.	1,210	200
6KG	Kalgoorlie, W.A.	1,210	500
4AK	Oakey, Q.	1,220	2,000
2NC	Newcastle, N.S.W.	1,230	2,000
3TR	Sale, Victoria	1,240	1,000
6IX	Perth, W.A.	1,240	500
1YD	Auckland, N.Z.	1,250	750
9PA	Port Moresby, N.G.	1,250	500
3SR	Shepparton, Victoria	1,260	2,000
2SM	Sydney, N.S.W.	1,270	1,000
3AW	Melbourne, Vic.	1,280	600
4BK	Brisbane, Q.	1,290	750
2TM	Tamworth, N.S.W.	1,300	2,000
1XH	Hamilton, N.Z.	1,310	2,000
5AD	Adelaide, S.A.	1,310	500
3BA	Ballarat, Vic.	1,320	500
6KY	Perth, W.A.	1,320	500
3SH	Swan Hill, Vic.	1,330	200
4BU	Bundaberg, Q.	1,330	500
2XN	Nelson, N.Z.	1,340	*2,000
2LF	Young, N.S.W.	1,340	300
6TZ	Dardanup, W.A.	1,340	2,000
3GL	Geelong, Vic.	1,350	1,000
4GY	Gympie, Q.	1,350	200
3MA	Mildura, Vic.	1,360	200
2XP	New Plymouth, N.Z.	1,370	*2,000
2MO	Gunnedah, N.S.W.	1,370	100
5SE	Mt. Gambier, S.A.	1,370	200
6GE	Geraldton, W.A.	1,370	500
2GN	Goulburn, N.S.W.	1,380	200
4MK	Mackay, Q.	1,380	100
4BH	Brisbane, Q.	1,390	1,000
2PK	Parkes, N.S.W.	1,400	200
5AU	Port Augusta, S.A.	1,400	200
2KO	Newcastle, N.S.W.	1,410	500
2AP	Apia, Samoa	1,420	2,000
3XY	Melbourne, Vic.	1,420	600
4XD	Dunedin, N.Z.	1,430	100
2WL	Wollongong, N.S.W.	1,430	500
6CI	Collie, W.A.	1,430	500
2QN	Deniliquin, N.S.W.	1,440	200
4IP	Ipswich, Q.	1,440	200
2MG	Mudgee, N.S.W.	1,450	100
7DY	Derby, Tas.	1,450	200
2CK	Cessnock, N.S.W.	1,460	300
5MU	Murray Heights, S.A.	1,460	200
3CV	Bendigo, Vic.	1,470	500
2MW	Murwillumbah, N.S.W.	1,470	500
2AY	Albury, N.S.W.	1,480	200
2BE	Bega, N.S.W.	1,490	200
4ZR	Roma, Q.	1,490	200
2BS	Bathhurst, N.S.W.	1,500	200
3AK	Melbourne, Vic.	1,500	200
5DR	Darwin, N.T.	1,500	500
2NA	Newcastle, N.S.W.	1,510	2,000
*2	Naroona, N.S.W.	1,520	—
5AL	Alice Springs, S.A.	1,530	30
*2	Tenterfield, N.S.W.	1,530	—
*3	Bendigo, Vic.	1,530	—
*5	Port Lincoln, S.A.	1,530	—
2LG	Lithgow, N.S.W.	1,540	200
*4	Gympie, Q.	1,540	—
*7	Queenstown, Tas.	1,540	—
*2	Armidale, N.S.W.	1,550	—
*2	Canberra, F. T.	1,560	—

R.M.A. COLOUR CODES

CONDENSERS.

Condensers are marked the same way as resistors so far as a table of figures and zero equivalents is concerned.

You look at the condenser on the side that is trade-marked. The three dots are read from **left to right.** The final number obtained is in **micro**microfarads. If you want to convert to microfarads, just simply divide the figure obtained, by 1,000,000 that is, move the decimal point six places to the left.

Sometimes arrows or arrowheads occur. Just simply read the dots above or in these, from tail to head. They indicate that you should read from left to right.

Regarding tubular paper condensers, some manufacturers, in addition to the colours discussed above, use the following colours to indicate the D.C. working voltage:

	Volts.		Volts.
Brown	100	Violet	700
Red	200	Grey	800
Orange	300	White	900
Yellow	400	Gold	1000
Green	500	Copper	1600
Blue	600	Silver	2000

I.F. TRANSFORMERS.

Red	"B"-plus lead
Blue	Plate lead
Green	Control-grid lead
Black	Grid-return lead

(If the secondary is centre-tapped, the second diode plate lead is green-and-black striped; and black is used for the centre-tap lead).

AUDIO TRANSFORMERS.

Red	"B"-plus lead
Blue	Plate lead
Green	Grid lead
Black	Grid return

Brown.

Start lead of plate winding in C. T. transformers.

Yellow.

Start lead of grid winding if secondary is tapped.

Brown.

Start lead of plate winding if transformer is centre-tapped.

Yellow.

Start lead of grid winding if transformer is centre-tapped.

Note.—If polarity is not important, the brown and yellow leads may be blue and green respectively, in some transformers.

LOUDSPEAKER VOICE COILS.

Green Black	Start lead
Green	Finish lead

LOUDSPEAKER FIELD COILS.

Black and red	Start lead
Yellow and red	Finish lead
Slate and red	Tap lead

POWER TRANSFORMERS.

Primary .... Both leads, black

(If primary is tapped, black is the start or common lead; black and red striped is the finished lead, and black and yellow is the tap lead).

Rectifier Plate Winding ..... Both red

Centre tap is red and yellow striped.

Rectifier Fil. Wdg. ...... Both yellow

Centre tap is yellow and blue striped

Fil. Wdg. No. 1 .... Both green

Centre tap is green and yellow striped

Fil. Wdg. No. 2 .... Both brown

Centre tap is brown and yellow striped

Fil. Wdg. No. 3 .... Both slate

Centre tap is slate and yellow striped.

Call and Location.	Freq. Kilo-cycles.	Power in Watts.	Schedule, Slogan, English News, Periods, etc.
ZFY—Georgetown, Br. Guiana	6000	1,000	"Voice of Guiana," 10.40 p.m.-12.15 p.m.
YSW—Santa Ana, El Salvador	6000	1,000	12.30-4.00 p.m., "Radio del Pueblo."
HHYM—Port-au-Prince, Haiti	6000	—	5.00-7.00 a.m., 11.30 a.m.-2.00 p.m.
Radio Noumea, New Caledonia	6000	500	Noon-1.00 p.m., 7.30-9.00 p.m.
DZH4—Manila, Philippines	6000	—	10.30 p.m.-4.00 a.m. "The Voice of Manila."
OAX2A—Trujillo, Peru	6000	250	11.30 a.m.-4.30 p.m., "Radio Trujillo."
Damascus, Syria	6000	500	5-6 p.m., midnight-1 a.m., 4-9 a.m.
HJKB—Bogota, Colombia	6000	—	2.00-4.00 p.m., "Emisora Neuvo Mundo."
VE9AI—Edmonton, Canada	6005	200	2-6.5 p.m.; News, 5 p.m.
CFCX—Montreal, Canada	6005	75	Midnight-5.00 p.m.
HP5K—Colon, Panama	6005	250	"La Voz de la Victor," 12.5 a.m.-4 p.m.
Rabat, Morocco	6005	2,500	7.00-8.45 p.m., midnight-11.30 a.m.
CJCX—Sydney, N.S., Canada	6010	1,000	11.55 p.m.-4 p.m.
CE601—Antofagasta, Chile	6010	5,000	"La Voz del Norte," 2-4 p.m.
VUD9—Delhi, India	6010	7,500	2.45-4.00, 4.10-6.30 a.m.
Dornbirn, Austria	6005	200	5-7.35 p.m., 4-11 a.m., "Radio Voralberg."
OLR2A—Prague, Czechoslovakia	6010	30,000	
GRB—London, England	6010	50,000	European Service.
OAX4Q—Lima, Peru	6010	2,000	"Radio Victoria."
PRA8—Recife, Brazil	6012	5,000	"Radio Club Pernambuco."
JKK—Tokio, Japan	6015	5,000	9.15 a.m.-2.07 a.m.
XEOI—Mexico City, Mexico	6015	1,000	"Radio Mil," to 6 p.m. and later.
HJCX—Bogota, Colombia	6018	750	"La Voz de Colombia," 12-1 a.m., to 4 p.m.
HS8PD—Bangkok, Siam	6020	2,500	10.00-11.30 p.m., English.
Brazaville, French Eq. Africa	6024	1,500	4.00-9.30 a.m.
XEUW—Vera Cruz, Mexico	6020	250	Midnight-5.45 p.m.
Kuala Lumpur, Malaya	6025	7,500	12.45-3.30 a.m. in English.
PGD—Hilversum, Holland	6025	5,000	Good signal, 8 a.m.
CFVP—Calgary, Canada	6030	100	12.30 a.m.-7.00 p.m.
XEKW—Morelia, Mexico	6030	500	"El Eco de Michoacan" to 4 p.m.
Radio Stuttgart, Germany	6030	10,000	5.00-9.45 p.m., 2.55-10.00 a.m.
DZH6—Manila, Philippines	6030	1,000	10.00 p.m.-2.00 a.m.
HP5B—Panama City, Panama	6030	150	"Radio Miramar," 11 a.m.-4 p.m.
Monte Carlo, Monaco	6035	25,000	6-8 p.m., 6-10.15 a.m., "Radio Monte Carlo."
Rangoon, Burma	6035	1,500	English 2.15-3.15 a.m.
OAX6B—Arequipa, Peru	6035	100	"Radio Landa" closes 5.00 p.m.
GWS—London, England	6035	50,000	European Service.
CXA30—Montevideo, Uruguay	6035	800	"Radio Nacional," 10 a.m.-3 p.m.
COBF—Havana, Cuba	6040	1,000	"Radio Libertad," 1 a.m.-4 p.m.
GSY—London, England	6040	100,000	"Voice of America" 7.30-10.30 a.m.
WRUA—Boston, U.S.A.	6040	20,000	To South America, 1.30-6 p.m.
WRUS Boston, Mass., U.S.A.	6040	50,000	8.15-11.30 a.m.
XETW—Tampico, Mexico	6045	100	"La Voz de Tampico," 4.45 a.m.-4.45 p.m.
Radio Batavia, Java	6045	100,000	
GSA—London, England	6050	50,000	European Service.
*OAX6A—Arequipa, Peru	6050	250	"Radio Arequipa."
HJEX—Cali, Colombia	6055	2,500	11.30 p.m.-3.30 p.m.
VQ7LO—Nairobi, Kenya	6060	1,500	12.30-1.30 a.m., Wed., Fri. only.
CKRZ—Montreal, Canada	6060	50,000	
KNBI—San Francisco, Calif.	6060	50,000	9 p.m.-2.15 a.m.
HORT—Balboa, Panama	6060	—	Closes 4.15 p.m. "Radio Balboa."
GSX—London, England	6060	100,000	European Service.
Radio Pakistan, Karachi, Pakistan	6062	250	
"Radio Tannarive," Madagascar	6065	—	In French to 6.25 a.m.
HC2FQ—Guayaquil, Ecuador	6065	500	"Radio Continental," 10 a.m.-4 p.m.
*SBO—Stockholm, Sweden	6065	12,000	6.40-8.10 p.m.
CFRX—Toronto, Canada	6070	1,000	10.55 p.m.-4.45 p.m.
GRR—London, England	6070	50,000	
*CXA3—Montevideo, Uruguay	6078	1,000	"Radio Ariel." Opens 10 p.m.
CKFX—Vancouver, Canada	6080	10	2.30 a.m.-8 p.m.
Munich Germany	6080	85,000	4.00-10.00 a.m., "Voice of America."
RAIS—Berlin, Germany (U.S. Zone)	6080	85,000	10.00-11.00 a.m., 3.00 p.m.-4.56 a.m.
Rome, Italy	6085	10,000	English 9.00-9.20 a.m
ZYK2—Recife, Brazil	6085	15,000	11 p.m.-2.00 p.m.
Radio Luxembourg, Luxembourg	6090	6,000	4.00-11.00 a.m.
VLI2—Sydney, N.S.W.	6090	2,000	8.45-10.30 a.m., 8.30 p.m.-1.30 a.m.
Tabriz, Azerbaijan, Iran	6090	—	2-6.45 a.m.
CBFW—Montreal, Canada	6090	7,500	12.30 a.m.-4.30 p.m.
*GWM—London, England	6090	50,000	
ZYB7—Sao Paulo, Brazil	6095	5,000	"Radiodidusoar Sao Paulo," to 3 p.m.
DYH3—Cebu, Philippines	6100	250	9.00 p.m.-4.05 a.m.
TGOA—Guatamala City, Guata.	6102	—	"La Voz de la America" to 6 p.m.
WLKS—Kure, Japan	6105	1,000	8.30 a.m.-1.30 a.m. "Voice of B.C.O.F."
ZYN6—Fortaleza, Brazil	6105	5,000	"Ceara Radio Club," 8.30 a.m.-2 p.m.
HJFK—Pereira, Colombia	6105	2,500	"La Voz Amiga," 9 a.m.-3.30 p.m.
*CP2—La Paz, Bolivia	6110	5,000	"Radio Nac, de Bolivia."
GSL—London, England	6110	50,000	GOS 4.00-6.15 p.m.
HI1Z—Ciudad Trujillo, D.R.	6115	400	10.30 p.m.-4.00 p.m.
OIXI—Helsinki, Finland	6118	15,000	5-7 p.m., 9-midnight, 3.30-8.45 a.m.
*HP5H—Panama City, Panama	6122	600	"La Voz del Pueblo," 11 p.m.-4.45 p.m.
HI1G—Ciudad Trujillo, Dom. Rep.	6125	150	"Radio la Opinion," 1-9 p.m.
GWA—London, England	6125	50,006	European Service.
DYH2—Cebu, Philippines	6130	1,000	News 2 a.m., signs 4.00 p.m.
CHNX—Halifax, Canada	6130	500	11 p.m.-3.15 p.m.
COCD—Havana, Cuba	6130	1,000	"La Voz del Aire," 2 a.m.-5 p.m.
XEUZ—Mexico City, Mexico	6130	1,000	8 a.m.-5.20 p.m.
VLX2—Perth, Western Aust.	6130	10,000	10.30 p.m.-4.00 a.m.
ZJM4—Limassol, Cyprus	6135	7,500	3.55 p.m.-6.35 p.m. 3.45-8.15 a.m.
F.B.S., Malta	6140	—	B.B.C. News Relay 6.00 p.m.
WRUA—Boston, Mass, U.S.A.	6140	50,000	
HJDE—Medellin, Colombia	6145	5,000	"La Voz de Antioquia," 9 a.m.-3.30 p.m.
VLR2—Melbourne, Aust.	6150	2,000	8.00-10.15 a.m., 8.45 p.m.-2.00 a.m.
GRW—London, England	6150	50,000	European and Latin-American service.
WEIN1—Vienna, Austria	6155	300	4.45 p.m.-12.05 p.m.
CE615—Santiago, Chile	6155	3,000	"La Co-operative Vitalicia," 4 p.m.
CS2WD—Lisbon, Portugal	6155	300	7.30 a.m.-noon.
HJKJ—Bogota, Colombia	6160	—	11.50 p.m.-4.00 p.m.
CBRX—Vancouver, Canada	6160	150	Relays CBR to 7 p.m., news 6.55 p.m.
Saigon, French Indo-China	6165	10,000	Eng. 1.30-2.30 a.m.
HER3—Berne, Switzerland	6165	25,000	5.20-6.40 p.m., 5-10.15 a.m.
*GWK—London, England	6165	50,000	
HHCM—Port-au-Prince, Haiti	6167	100	"N.B.C.," 10 p.m.-1.30 a.m., 10 a.m.-2 p.m.
CXA21—Montevideo, Uruguay	6170	100	"Radio Felix," 11 a.m.-2 p.m.
GSZ—London, England	6170	100,000	
YDA2—Bandoeng, Java	6170	250	11.30 a.m.-1 p.m., 4.30-7.15, 10 p.m.-3.30 a.m.
XEXA—Mexico City, Mexico	6175	1,000	"Radio Gobernacion," 1 a.m.-6 p.m.
DUH2—Manila, Philippines	6170	400	9 a.m.-4.00 a.m.
VUV2—Hyderabad, India	6170	—	12.30-5.30 a.m.
ZJM5—Lamassol, Cyprus	6175	7,500	3.55-6.35 p.m., 3.45-8.15 a.m.
HOB—Panama City, Panama	6175	—	11.30 p.m.-5.00 p.m.
LRM—Mendoza, Argentina	6180	10,000	"Radio Aconagua," 10.30 p.m.-4 p.m.
GRO—London, England	6180	50,000	6.30-11.15 a.m., 6-8.15 p.m
XECC—Puebla, Mexico	6185	50	'Impulsoras del Progreso' 2-5 p.m.
HC1LQ—Ibarra, Ecuador	6187	250	"Radio Equinoccial."
VUD7—Delhi, India	6190	100,000	3.50-6.15 a.m.
Hanoi, Indo-China	6190	1,000	9.00 p.m.-1.30 a.m. "Radio France."
Frankfurt, Germany	6190	1,000	4.00-7.45 p.m., 2.00-10.00 a.m.
GRN—London, England	6195	50,000	G.O.S. 5.30 p.m.
HJCT—Bogota, Colombia	6198	10,000	'Radiodifusora Nacional, 3.30 p.m.
Paris, France	6200	50,000	5.00-5.15 p.m., 11.15 p.m.-2.30 a.m.
HC1AC—Quito, Ecuador	6210	250	11.30 p.m.-5.00 p.m.
WARSAW 3, Warsaw, Poland	6215	7,500	English 7.30-7.50 a.m.
CE622—Santiago, Chile	6220	5,000	Opens 11.30 p.m., closes 4.10 p.m. in English.
TGJA—Guatemala City, Guat.	6230	1,000	1.00 a.m.-2.30 p.m.
HRD2—La Caiba, Honduras	6235	200	"La Voz de Atlantida," to 3 p.m.
HJCF—Bogota, Colombia	6240	750	'La Voz de Bogota," 10 a.m.-4.10 p.m.
CE625—Santiago, Chile	6250	5,000	"Soc. de Nacional Agricultura."
YSUA—Cincuenta, El Salvador	6250	—	Signs 5 p.m.
TGRA—Guatamala City, Guat.	6255	—	"La Voz de Guardia Civil"; noon-3 p.m.
YSR—San Salvador, El. Salv.	6270	1,000	'La Voz de El Salvador.'
ZPA1—Asuncion, Paraguay	6276	2,500	"Radio Nac. de Paraguay," to 4 p.m.
HJWO—Bogota, Colombia	6270	—	Closes 4 p.m. "Emisora Colombia."

Call and Location.	Freq. Kilo-cycles.	Power in Watts.	Schedule, Slogan, English News, Periods, etc.
OTM2—Leopoldville, Belgium Congo	9380	50,000	3.45-9 a.m., 5-7 p.m.
GRI—London, England ..	9410	50,000	Latin American service, 11 a.m.-3.30 p.m.
CP21—Sucre, Bolivia	9430	270	"Radio La Pata," 2-4.45 a.m., 8-10 a.m.
COCH—Havana, Cuba ..	9440	1,000	11 p.m.-5 p.m. "Union Radio."
Brazzaville, Fr. Eq. Africa ..	9440	50,000	4 a.m.-1 p.m., News 6.45, 8.45 a.m.
*OAX4W—Lima, Peru	9440	1,500	"Radio America."
LRY—Buenos Aires, Argentina	9450	15,000	Eng. 3.00-6.00 p.m.
TAP—Ankara, Turkey ..	9465	20,000	4.45 p.m.
CR6RA—Luanda, Angola ..	9470	250	7-8.30 a.m.
CP38—La Paz, Bolivia ..	9480	250	"Radio Nat. de Bolivia.'
Radio Monte Carlo, Monaco ..	9490	25,000	6.00-8.00 p.m., 11 p.m.-1.00 a.m.
*GWF—London, England ..	9490	50,000	
XEWW—Mexico City, Mexico	9500	10,000	"La Voz de America Latina," 12.30 a.m.-6.45 p.m.
VLI3 Sydney, N.S.W. ..	9500	2,000	10.45 a.m.-8.15 p.m.
OIX2—Helsinki, Finland ..	9500	15,000	5.30-6.30 p.m., 10-midnight, 3.30-8.45 p.m.
DZH3—Manila, Philippines ..	9500	—	9.30 a.m.-4 a.m.
	9505	7,500	8.25 p.m.-2 a.m.
HOLA—Colon, Panama ..	9505	—	Closes 3 p.m.
JBD—Tokio, Japan	9505	7,500	7.55 p.m.-2.00 a.m.
*YUC—Belgrade, Yugoslavia ..	9507	10,000	
GSB—London, England ..	9510	50,000	5.45-10.45 a.m., 11 a.m. 8 p.m.
KCBR—San Francisco, Calif.	9510	100,000	
ZBW3 Hongkong, China ..	9515	5,000	4.30-6 p.m., 10.30 p.m. 3 a.m. B.B.C. new 11 p.m., 1 a.m.
VLT7—Port Moresby New Guinea	9520	2,000	Testing to 7.00 a.m. 2.00-4.00, 6.00-8.00 p.m.
Paris, France	9520	100,000	4.15-7 p.m., 7.15-9 p.m.
OZF Copenhagen, Denmark ..	9520	100,000	3.00-5.25 p.m. (Eng. 5 p.m.)
HI2L Ciudad Trujillo, D.R. .	9525	500	"La Voz de Tropico."
GWJ London, England ..	9525	50,000	European Service.
KGEI San Francisco, Calif. .	9530	100,000	A.F.R.S.
WNRE New York, U.S.A. ..	9530	100,000	Voice of America, 10 a.m.
VUC3 Calcutta, India ..	9530	250	1.30-3.30 p.m., 11 p.m.-1 a.m.
KRHO Honolulu, Hawaii ..	9530	50,000	9.00 p.m.-2.15 a.m.
WGEO Schenectady, U.S.A.	9530	100,000	Noon-5 p.m.
SBU Stockholm, Sweden ..	9535	12,000	6.30-10 a.m.
HER4 Berne, Switzerland ..	9535	100,000	1.30-3 p.m., 5.20-6.40 p.m., 5-10.15 a.m.
Munich, Germany	9540	85,000	4.00-10.00 a.m. "Voice of America."
Paris, France	9540	100,000	1.55-3.45 p.m., 5-5.45 a.m.
LKJ Oslo, Norway	9540	5,000	7-7.15 p.m., 10.45-12.30 a.m., 4-10 a.m.
VE9AI Edmonton, Canada ..	9540	—	
VLR Melbourne, Aust. ..	9540	2,000	10.30 a.m.-7.15 p.m.
XEFT—Vera Cruz, Mexico ..	9540	250	"La Voz de Vera Cruz," 6 p.m. and later.
ZL2 Wellington, N.Z. ..	9540	10,000	
YDQ Macassar, Celebes ..	9550	10,000	10 a.m.-noon, 3.00-6.30 p.m., 9 p.m.-3 a.m.
*OLR3A Prague, Czechoslovakia	9550	30,000	News 7.45 a.m.
GWB—London, England ..	9550	50,000	European service.
ZYK3—Recife, Brazil	9565	—	11 p.m.-1.00 a.m., 7.00 a.m.-2.00 p.m.
VUB3 Bombay, India ..	9550	250	11.30 p.m.-1.45 a.m.
Paris, France	9558	100,000	5.15-9.15 p.m., 10-11.30 p.m., 10.30-11.15 a.m.
XETT Mexico City, Mexico ..	9558	500	Midnight-6.45 p.m.
JBD2 Tokio, Japan	9560	7,500	7.55 p.m.-2.00 a.m.
VUD7 Delhi, India	9565	100,000	3.15-4.10 p.m.
*KWIX—San Francisco, Calif.	9570	50,000	3.15-8.45 p.m. A.F.R.S.
WRUA—Boston, U.S.A. ..	9570	50,000	
GSC—London, England ..	9580	50,000	Eastern Broadcasts 4.30 p.m.
GWX—London, England ..	9570	100,000	
VLH-3—Melbourne, Aust. ..	9580	10,000	8.28 p.m.-2.00 a.m.
VLA11—Melbourne, Aust. ..	9580	100,000	4.30-5.15 a.m. (Ger.).
VLB9—Melbourne, Aust. ..	9580	100,000	4.30-5.15 a.m.
CE960—Santiago, Chile ..	9585	1,000	Noon-5.00 p.m. "Radio la Americana."
PCJ—Hilversum, Holland ..	9590	60,000	7-8 a.m.
VUD4 Delhi, India	9590	10,000	News 1 a.m.
VUM2—Madras, India ..	9590	10,000	7-9.30 p.m., 10.30-11.30 p.m.
VUD3—Delhi, India	9590	5,000	4.30-5.30 a.m.
VUM3—Madras, India	9590	250	1.30-3.30 p.m.
WLWK—Cincinnati, Ohio, U.S.A.	9590	75,000	
GRY—London, England ..	9600	50,000	African Service, news 8.45 a.m.; 6 p.m.
Athens, Greece	9605	7,500	5.30-7.35 p.m., 10.00 p.m.-1.00 a.m.
XEYU—Mexico City, Panama	9605	250	"Radio Univ. Nacional," 2-5 p.m.
HP5J—Panama City, Panama	9605	380	"La Voz de Panama," 10 a.m.-3.30 p.m.
JKL2—Tokio, Japan (AFRS)	9606	5,000	9.15 a.m.-8.45 p.m.
LLG—Oslo, Norway	9610	100,000	6.25-7.30 p.m., 4.00-9.00 a.m.
ZYC8—Rio de Janeiro, Brazil	9610	25,000	8.00 a.m.-3.00 p.m.
VLW5—Perth, Western Aust.	9610	2,000	10.30 p.m.-4.00 a.m.
VLX3—Perth, West Aust. ..	9610	10,000	2.30-10.00 p.m.
CHLS—Montreal, Canada ..	9610	50,000	8.45-10.00 p.m., Sundays (to N.Z.).
Radio Goa, Goa, Portuguese India	9610	500	12.30-3.30 a.m.
XERQ—Mexico City, Mexico ..	9615	500	"Radio Continental," heard 6 p.m.
VLB9 Melbourne, Aust. ..	9615	100,000	3.00-3.45 a.m.
VP4RD Port of Spain, Trinidad	9620	500	10.00 p.m.-1.00 a.m., 8.00 a.m.-3.00 p.m., Local News 10 p.m., B.B.C. relay 11 p.m.
VUD7—Delhi, India	9620	100,000	7.00-8.00 a.m.
DUH4—Manila, Philippines ..	9620	400	News 10 p.m. "The People's Station."
Paris, France	9620	100,000	5.15-7 p.m., 7.15-9 a.m.
Radio Addis Ababa, Ethiopia	9620	1,000	1.45-4.10 a.m., English 3.15-4 a.m.
CXA6 Montevideo, Uruguay	9623	3,000	8.30 a.m.-2 p.m.
GWO—London, England ..	9625	50,000	
XEBT—Mexico City, Mexico .	9625	10,000	Eng. news 3.45 p.m., sign off 6 p.m.
VUD2—Delhi, India	9630	10,000	7.00-9.00 p.m.
CBFX—Montreal, Canada ..	9630	7,500	Sign off 5.00 p.m.
CKLO—Sackville, N.B., Canada	9630	50,000	
"Radio Italiana," Turin, Italy	9635	50,000	Closes 10 a.m.
CXA8—Colonia, Uruguay ..	9640	3,000	4-6 a.m., 9 a.m.-2 p.m. (see 11840).
DZH2—Manila, Philippines ..	9640	1,000	9.00 a.m.-4.00 a.m.
*CHMD—Sackville, N.B., Canada	9640	50,000	
*COX—Havana, Cuba . ..	9640	5,000	Signs 4 p.m.
GVZ London, England ..	9640	50,000	
HVJ Vatican City, Europe ..	9645	25,000	4.00-4.30 a.m.
VLB2 Melbourne, Aust. ..	9650	100,000	8.00-9.30 a.m.
KNBA San Francisco, Cal. ..	9650	50,000	7.45-8.45 p.m.
HED6—Schwarzenburg, Switzerland	9655	100,000	
WEIN3 Vienna, Austria	9664	250	4.45 p.m.-12.05 p.m.
LRX—Buenos Aires, Argentina	9660	7,500	"Radio el Mundo."
VLQ3 Brisbane, Aust. ..	9660	10,000	8 a.m.-2 a.m.
GWP—London, England ..	9660	50,000	
HVJ—Vatican City, Vatican ..	9660	25,000	News 6.15 a.m.
Radio Moscow, U.S.S.R. ..	9660	50,000	English, 6.30-7.30, 8.30-9.30 a.m.
HHBM Port-au-Prince, Haiti	9660	1,000	"Nac. Broadcasting Co.," 10 p.m.-1.30 a.m.
JKI2—Tokio, Japan	9655	5,000	10.25 a.m.-7.45 p.m.
WNBI—New York, U.S.A. ..	9670	50,000	
WRCA—New York, U.S.A. ..	9670	50,000	Noon-3.15 p.m. to South America.
GWT—London, England ..	9675	50,000	European Service, 7 p.m. 11 p.m. - 4.30 a.m., 8.30-10.15 a.m., 4.30-4.45 p.m.
VUD9—Delhi, India	9680	7,500	12.00-12.50 a.m.
XEQQ—Mexico City, Mexico .	9680	1,000	"Radio Panamericana," midnight-5.45 p.m.
EQC—Teheran, Iran	9680	14,000	"Radio Teheran," 5-7.30 a.m., news, 6.30 a.m.
VUD3—Delhi, India	9680	5,000	3.00-3.30 p.m.
VUD6—Delhi, India	9680	10,000	10 p.m., 2 a.m., 3-5 a.m.
LRA1—Buenos Aires, Argentina	9683	7,000	"Radio del Estado."
GRX—London, England ..	9690	50,000	Pacific Service.
Singapore, Malaya	9690	7,500	10.30 p.m.-4.30 a.m.
DYH5—Manila, Philippines ..	9690	250	9.00 a.m.-5.00 a.m. (next day).
JKM2—Tokio, Japan	9695	5,000	9.45-11.00 a.m.
GWY—London, England ..	9700	100,000	"Voice of America" relays.
KCBF San Francisco, Calif.	9700	50,000	9 p.m.-2.30 a.m.
WLWS—Cincinnati, U.S.A. ..	9700	75,000	Noon-5 p.m.
Fort-de-France, Martinique ..	9705	1,500	"Radio Martinique."
OAX4K—Lima, Peru	9712	250	"Radio Goicochea," 11 a.m.-3 p.m.
Radio Malaya, Singapore ..	9710	7,500	10.30-3.30 a.m.
PRL7—Rio de Janiero, Brazil	9720	50,000	"Radio Nacional."
Radio Sario, Mendado, Celebes	9720	800	10 p.m.-midnight.
CS2MF—Lisbon, Portugal ..	9727	10,000	Noon-1.00 p.m. "Emisora Nacional."
CE970—Valparaiso, Chile ..	9728	1,000	11 p.m.-4 p.m., opens and signs in English.
DZH7—Manila, Philippines ..	9730	1,000	
Leipzig, Germany	9730	12,000	3 p.m.-11 a.m.
HI2T—Ciudad Trujillo, D.R. .	9740	7,500	Midnight-5.00 p.m.
CTC2—Lecpoldville, B. Congo	9745	50,000	English to 4 p.m.
KCBR—San Francisco, Calif.	9750	200,000	9 p.m.-3 a.m.
CR7BE—Lourenco Marques, Mos.	9755	10,000	English to 3.00 a.m.
Khartoum, Sudan	9750	400	4.15-4.45 p.m., 4.30-6.00 a.m.
TGWA—Guatemala City, Guat.	9780	10,000	Spanish to 5.15 p.m.
Monte Carlo, Monaco	9785	25,000	6.00-8.00 p.m., 6.00-10.15 a.m.
HS8PD—Bangkok, Siam ..	9790	2,500	10.00-11.30 p.m. in English.

Call and Location.	Freq. Kilo-cycles.	Power in Watts.	Schedule, Slogan, English News, Periods. etc.
KNBX—San Francisco, Calif.	15150	100,000	
Munich 11, Germany	15150	75,000	5.45-7 a.m.
YDC—Batavia, Java	15150	3,000	9.30 p.m.-4.00 a.m. News 11 p.m.
SBT—Stockholm, Sweden ..	15155	12,000	3-6.15 a.m.
OZH—Copenhagen, Denmark .	15165	50,000	10-11 p.m., Tue., Thurs., Sat.
VLG7—Melbourne, Aust. ..	15160	10,000	8-10 a.m.
ZYB9—Sao Paulo, Brazil ..	15160	5,000	"Radiodifusora Sao Paulo."
VUD7—Delhi, India	15160	100,000	3.15-6.30 p.m. News 4.30 p.m.
Lisbon, Portugal	15160	10,000	Opens 9.00 a.m.
XEWW—Mexico City, Mexico	15160	10,000	
ZYN7—Fortaleza, Brazil ..	15165	5,000	7.00-9.00 a.m.
VLB11—Melbourne, Aust. ..	15160	100,000	9.30-11.30 a.m.
*TGWA—Guatemala City, Guat.	15170	10,000	
GSO—London, England ..	15180	50,000	GOS, 5.00 p.m.-9.00 p.m.
VUD5—Delhi, India	15190	100,000	3.15-6 p.m., 9-10.15 p.m.
VUD5—Delhi, India	15190	100,000	1.30-2.45 p.m.
CKCX—Montreal, Canada ..	15190	50,000	2.15-4 a.m.
OIX4—Helsinki, Finland ..	15195	100,000	3.00-5.00 p.m., midnight-1 a.m., 9.00-10.00 a.m.
TAQ—Ankara, Turkey ..	15195	20,000	Mailbag, Mondays 8.30 a.m.
VLB6—Melbourne, Aust. ..	15200	100,000	9.45-11.15 a.m.
VLC—Melbourne, Aust. ..	15200	50,000	4.00-4.45 p.m. (French).
WOOC—New York, U.S.A. ..	15200	50,000	10.30 p.m.-9.30 a.m.
VLA6—Melbourne, Aust. ..	15200	100,000	8.00-9.30 a.m., 4.45-5.45 p.m.
GWU—London, England ..	15210	100,000	7.30-8.00 a.m.
WBOS—Boston, Mass., U.S.A.	15210	50,000	4-10 a.m., 1-3 p.m.
VLG11—Melbourne, Aust. ..	15210	10,000	2.00-4.15 p.m.
KGEX—San Francisco, Calif.	15210	100,000	
VLC-11—Melbourne, Aust. ..	15220	50,000	8.00-9.45 a.m.
PCJ2—Hilversum, Holland ..	15220	60,000	To N.Z. Tuesdays, 9-10.30 p.m.
JBD3—Tokio, Japan	15225	7,500	10.50 a.m.-7.45 p.m.
JBD4—Tokio, Japan	15235	7,500	10.50 a.m.-7.45 p.m.
VLH5—Melbourne, Aust. ..	15230	10,000	11.15 a.m.-8.15 p.m.
VLA5—Melbourne, Aust. ..	15230	100,000	9.45-11.15 a.m.
Radio Moscow, U.S.S.R. ..	15230	50,000	English, 1.30-3.15 p.m.
*OLR5A—Prague, Czechoslovakia	15230	30,000	Noon-1 p.m.
KNBX—San Francisco, Calif.	15240	100,000	
Paris, France	15240	100,000	4-4.45 p.m.
VLG6—Melbourne, Aust. ..	15240	10,000	10.30 a.m.-8 p.m., 3-4, 4.35-5.40 p.m.
WLWK—Cincinnati, Ohio ..	15250	50,000	5-10 a.m.
WLWR—Cincinnati, Ohio ..	15250	175,000	11 a.m.-5 p.m.
KRHO—Honolulu, Hawaii ..	15250	100,000	9 p.m.-3 a.m.
GSI—London, England ..	15260	50,000	
WCBN—New York, U.S.A. ..	15270	50,000	5-9.30 a.m.
Radio Pakistan, Dacca, Pak.	15275	7,500	Eng. news 12.30, 2.45 a.m.
WNRE—New York, U.S.A. ..	15280	50,000	4-11 a.m.
ZL4—Wellington, N.Z. ..	15280	10,000	7.00-9.00 p.m.
WRUL—Boston, Mass., U.S.A.	15290	50,000	5-9 a.m., 9.10-10 a.m.
VUD3—Delhi, India	15290	5,000	3.30 p.m.-midnight.
LRU—Buenos Aires, Argentina	15290	10,000	Eng. to 6.00 p.m.
VUD10—Delhi, India	15290	20,000	4.10-6.30 a.m.
GWR—London, England ..	15300	50,000	News 11 p.m.
Singapore, Malaya	15300	7,500	9.15 p.m.-4.30 a.m.
GSP—London, England ..	15310	50,000	9.15-11.45 a.m.
HER6—Berne, Switzerland ..	15315	100,000	1.30-3 p.m.
VLA5—Shepparton, Victoria ..	15320	100,000	4.45 p.m.-5.40 p.m.
CKCS—Montreal, Canada ..	15320	50,000	4.30-11.05 a.m.
VLC4—Melbourne, Aust. ..	15320	50,000	4.45-5.45 p.m., 8.30-11.30 p.m.
HE17—Berne, Switzerland ..	15320	25,000	1.30-3 p.m.
WGEO—Schenectady, U.S.A. .	15330	100,000	11 p.m.-9.30 a.m.
Radio Pakistan, Dacca ..	15330	7,500	English news, midnight.
Manila, Philippines	15330	50,000	7.15-8.45 p.m. (U.N.).
KNBX—San Francisco, Calif.	15330	200,000	9 a.m.-3 p.m.
Athens, Greece	15345	7,500	3.00-9.30 a.m., 10.30 a.m.-11.00 a.m.
VUD8—Delhi, India	15350	7,500	2-6.30 p.m., 8.30 p.m.-1.30 a.m.
Paris, France	15350	25,000	Midnight-2 a.m.
WRUA—Boston, Mass. ..	15350	50,000	4-11 a.m., 1-5 p.m.
FHE—Dakar, Senegal	15392	12,000	7-8.30 a.m. in French.
PZX5—Paramaribo, Surinam .	15405	750	10-11.30 p.m.
Radio Moscow, U.S.S.R. ..	15420	50,000	English, 1.30-3.15 p.m.
GWE—London, England ..	15435	50,000	
Brazzaville, French Eq. Africa	15595	50,000	5-6.30 p.m., 9.45-12.45 a.m.
HEK5—Berne, Switzerland ..	15875	25,000	7.20-7.50 a.m.
HVJ—Vatican City, Vatican .	17445	25,000	1.40-2.15 a.m.
Brazzaville, French Eq. Africa	17527	50,000	5-6.30 p.m., 9.45-12.45 a.m.
PLD6—Batavia, Java	17630	2,500	3.00-4.00 a.m.
GVP—London, England ..	17700	50,000	11 p.m.-2 a.m.
GRA—London, England ..	17715	50,000	GOS 8.00-10.00 p.m.
GVQ—London, England ..	17730	50,000	
WRUW—Boston, Mass., U.S.A.	17750	50,000	10.30 p.m.-7 a.m.
VUD3—Delhi, India	17760	5,000	7.00-7.40 p.m.
KWID—San Francisco, Calif.	17760	100,000	9 a.m.-12.15 p.m.
KCBR—San Francisco, Calif.	17770	200,000	
OTC4—Leopoldville, Bel. Congo	17770	50,000	4.30-9.45 a.m., 10 p.m.-2.30 a.m.
PHI—Hilversum, Holland ..	17760	5,000	
WNBI—New York, U.S.A. ..	17780	50,000	4-11 a.m., noon-5 p.m.
Radio Monte Carlo, Monaco ..	17780	25,000	11.00 p.m.-1.00 a.m.
KGEX—San Francisco, Calif.	17780	100,000	5.30-8.45 p.m.
HER7—Berne, Switzerland ..	17784	25,000	8-8.30 p.m., Monday.
GSG—London, England ..	17790	50,000	Eastern Service.
KRHO—Honolulu, Hawaii ..	17800	100,000	7.45-8.45 p.m.
WLWO—Cincinnati, Ohio ..	17800	75,000	5-10 a.m.
GSV—London, England ..	17810	50,000	5.30-9 p.m., 10 p.m.-1 a.m.
CKNC—Montreal, Canada ..	17820	50,000	2.15-7 a.m.
VUD10—Delhi, India	17830	5,000	3.20-10.30 p.m., 10.40 p.m.-1 a.m.
WCBX—New York, U.S.A. ..	17830	50,000	4 a.m.-noon, 1-3 p.m.
VLC9—Melbourne, Aust. ..	17840	50,000	2.00-4.00 p.m., 4.30-5.40 p.m.
Paris, France	17850	25,000	2.30-3.30 a.m.
GRP—London, England ..	17870	50,000	3.30 a.m.-5 a.m.
WGEX—Schenectady, N.Y. ..	17880	50,000	4-11 a.m.
KGEX—San Francisco, Calif.	17880	100,000	Noon-3 p.m.
HCJB—Quito, Ecuador ..	17890	10,000	5.00-8.45 a.m. to Europe.
GRQ—London, England ..	18025	50,000	
GVO—London, England ..	18080	50,000	
WNRA—New York	18160	50,000	10.30 p.m.-6.15 a.m.

CONVERSION TABLE

Kilocycles to Metres

Freq. in K.C.		Wave-length Metres.	Freq. in K.C.		Wave-length Metres.
1000	=	299.8	770	=	389.4
990	=	302.8	760	=	394.5
980	=	305.9	750	=	399.8
970	=	309.1	740	=	405.2
960	=	312.3	730	=	410.8
950	=	315.6	720	=	416.4
940	=	319.0	710	=	422.3
930	=	322.4	700	=	428.3
920	=	325.9	690	=	434.6
910	=	329.4	680	=	440.9
900	=	333.1	670	=	447.5
890	=	336.9	660	=	454.3
880	=	340.7	650	=	461.3
870	=	344.6	640	=	468.5
860	=	348.6	630	=	475.9
850	=	352.7	620	=	483.6
840	=	356.9	610	=	491.5
833	=	360.1	600	=	499.7
830	=	361.2	590	=	508.2
820	=	365.6	580	=	516.9
810	=	370.2	570	=	526.0
800	=	374.8	560	=	535.4
790	=	379.5	550	=	545.1
780	=	384.4			

SHORT-WAVE COIL WINDING DATA

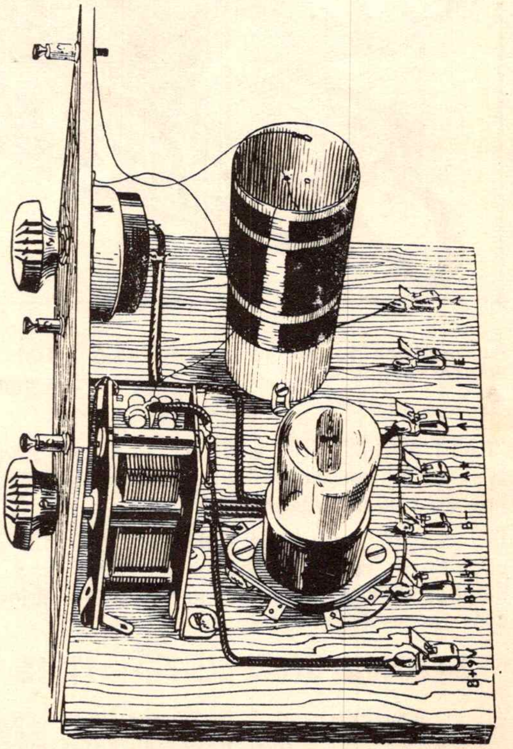
Wave-Range.	Aerial.	Detector.			
		R.F.	Grid.	Reaction.	Gauge.
150 mmfd. Capacity—					
12 to 19 metres	3	3	3	3	16 enamel
19 to 39 metres	4	6	6	6	24 ,,
29 to 51 metres	8	15	15	9	24 ,,
45 to 84 metres	10	26	26	11	24 ,,
70 to 110 metres	10	33	33	12	24 ,,
100 mfd. Capacity—					
12 to 17.5 metres	3	3	3	3	16 ,,
17 to 26 metres	4	7	7	5	24 ,,
25 to 38 metres	6	10	10	7	24 ,,
37 to 55 metres	7	16	16	8	24 ,,
54 to 85 metres	8	25	25	10	24 ,,
84 to 115 metres	10	34	34	12	24 ,,
75 mfd. Capacity—					
12 to 17 metres	3	3	3	3	16 ,,
17 to 24 metres	4	7	9	5	24 ,,
23 to 35 metres	5	11	11	7	24 ,,
34 to 51 metres	7	17	17	8	24 ,,
50 to 78 metres	10	26	26	10	24 ,,
77 to 100 metres	10	35	35	11	24 ,,
50 mmfd. Capacity—					
12 to 16.5 metres	3	3	3	3	16 ,,
16 to 22 metres	4	6	6	5	24 ,,
21 to 32 metres	5	10	10	8	24 ,,
31 to 45 metres	6	16	16	10	24 ,,
44 to 65 metres	8	23	23	12	24 ,,
64 to 95 metres	10	36	36	12	24 ,,

Call and Location.	Power in Watts.	Zone
1280 Kilocycles—		
KFOX—Long Beach, Calif.	1,000	P
KIT—Yakima, Wash.	1,000	P
KNAK—Salt Lake City, Utah	1,000	M
KXOB—Stockton, Calif.	1,000	P
1290 Kilocycles—		
KHSL—Chico, Calif.	1,000	P
KITO—San Bernadino, Calif.	1,000	P
KTRN—Wichita Falls, Texas	1,000	C
KUOA—Siloam Springs, Ark.	5,000	C
1300 Kilocycles—		
KOL—Seattle, Wash.	5,000	P
KROP—Brawley, Calif.	1,000	P
KYNO—Fresno, Calif.	1,000	P
1310 Kilocycles—		
KFBB—Great Falls, Mont.	5,000	M
KTKR—Taft, Calif.	500	P
KWBR—Oakland, Calif.	1,000	P
WRR—Dallas, Texas	5,000	C
1320 Kilocycles—		
KCRA—Sacramento, Calif.	1,000	P
KDYL—Salt Lake City, Utah	5,000	M
KXYZ—Houston, Texas	5,000	C
1330 Kilocycles—		
KFAC—Los Angeles, Cal.	5,000	P
KFH—Wichita, Kansas	5,000	C
KPOJ—Portland, Ore.	5,000	P
WFBC—Greenville, S.C.	5,000	E
1340 Kilocycles—		
KIST—Santa Barbara, Calif.	250	P
KRUX—Glendale, Ariz.	250	M
1350 Kilocycles—		
KCOR—San Antonio, Texas	1,000	C
KGHF—Pueblo, Colo.	5,000	M
KCSB—San Bernadino, Cal.	500	P
WADC—Akron, Ohio	5,000	E
WSMB—New Orleans, La.	5,000	C
1360 Kilocycles—		
KGB—San Diego, Calif.	1,000	P
KMO—Tacoma, Wash.	5,000	P
KRIS—Corpus Christi, Texas	1,000	C
KSCJ—Sioux City, Iowa	5,000	C
WSAI—Cincinnati, Ohio	5,000	E
1370 Kilocycles—		
KEEN—San Jose, Calif.	1,000	P
WCOA—Pensacola, Fla.	500	C
WDEF—Chattanooga, Tenn.	1,000	C
WSPD—Toledo, Ohio	5,000	E
1380 Kilocycles—		
KHON—Honolulu, Hawaii	5,000	—
KIDO—Boise, Idaho	1,000	M
KSBW—Salinas, Calif.	1,000	P
KWK—St. Louis, Mo.	1,000	C
WLOS—Asheville, N.C.	5,000	E
1390 Kilocycles—		
KCRC—Enid, Okla.	1,000	C
KGER—Long Beach, Calif.	5,000	P
KSLM—Salem, Ore.	1,000	P
WFBL—Syracuse, N.Y.	5,000	E
1400 Kilocycles—		
KRE—Berkeley, Calif.	250	P
KYAK—Yakima, Wash.	250	P
1410 Kilocycles—		
CKMO—Vancouver, B.C.	5,000	P
KERN—Bakerfield, Cal.	1,000	P
WALA—Mobile, Ala.	5,000	C
WING—Dayton, Ohio.	5,000	E
1420 Kilocycles—		
KUJ—Walla Walla, Wash.	1,000	P
WOC—Davenport, Iowa	5,000	C
WRBL—Columbus, Ga.	5,000	E
XEXX—Tijuana, B. Cal.	5,000	P
1430 Kilocycles—		
KARM—Fresno, Calif.	5,000	P
KLO—Ogden, Utah	5,000	M
KNEW—Spokane, Wash.	5,000	P
KTUL—Tulsa, Okla.	5,000	C
1440 Kilocycles—		
KFDA—Amarillo, Texas	5,000	C
KMED—Medford, Ore.	1,000	P
KMLB—Monroe, La.	1,000	C
KPRO—Riverside, Calif.	1,000	P
KVON—Nappa, Calif.	500	P
1450 Kilocycles—		
KVEN—Ventura, Calif	250	P
KSAN—San Francisco, Calif.	250	P
1460 Kilocycles—		
KIMA—Yakima, Wash.	1,000	P
KDON—Santa Cruz, C.	1,000	P
KSO—Des Moines, Iowa	5,000	C
WACO—Waco, Texas	1,000	C
1470 Kilocycles—		
KELA—Centralia, Wash.	1,000	P
KPLC—Lake Charles, La.	5,000	C
KXOA—Sacramento, Cal.	1,000	P
WMBD—Peoria, Ill.	5,000	C
WRGA—Rome, Ga.	5,000	E
XESM—Mexico City, D.F.	5,000	C
1480 Kilocycles—		
KANS—Wichita, Kansas	5,000	C
KGLU—Stafford, Ariz.	1,000	M
KIEM—Eureka, Calif.	1,000	
KVOE—Santa Ana, Calif.	1,000	P
KYOS—Merced, Calif.	5,000	P
WABB—Mobile, Ala.	5,000	C
WRDW—Augusta, Ga.	5,000	E
1490 Kilocycles—		
KTOH—Lihue, Hawaii	250	—
1500 Kilocycles—		
KSTP—St. Paul, Minn.	50,000	C
KXRX—San Jose, Calif.	1,000	P
WTOP—Washington, D.C.	50,000	E
XERH—Mexico City, Mex.	2,000	C
1510 Kilocycles—		
KGA—Spokane, Wash.	50,000	P
KSDO—San Diego, Calif.	5,000	P
WLAC—Nashville, Tenn.	50,000	C
1520 Kilocycles—		
KOMA—Oklahoma City, Okla.	50,000	C
WKBW—Buffalo, N.Y.	50,000	E
KTED—Laguna Beach, Cal.	1,000	P
1530 Kilocycles—		
KFBK—Sacramento, Calif.	50,000	P
WCKY—Cincinnati, Ohio	50,000	E
1540 Kilocycles—		
KGBC—Galveston, Texas	1,000	C
KXEL—Waterloo, Iowa	50,000	C
WPTR—Albany, N.Y.	50,000	E
1550 Kilocycles—		
KENT—Shreveport, La.	1,000	C
KSMO—San Mateo, Calif.	1,000	P
WLOA—Braddock, Pa.	1,000	E
XEBG—Tijuana, B.C. Mex.	1,000	P
KPMC—Bakersfield, Calif.	1,000	P
WQXR—New York, N.Y.	10,000	E
1570 Kilocycles—		
KCVR—Lodi, Calif.	250	P
WPTW—Piqua, Ohio	250	E
XERF—Villa Acuna, Mex.	50,000	C
1580 Kilocycles—		
KLOU—Lake Charles, La.	1,000	C
KOWL—Santa Monica, Calif.	1,000	P
1590 Kilocycles—		
KSJO—San Jose, Cal.	1,000	P
KTIL—Tillamook, Ore.	250	P
KVVC—Ventura, Calif.	1,000	P
WAKR—Akron, Ohio	5,000	E
XEMC—Mexico City, Mex.	5,000	C
1600 Kilocycles—		
KASH—Eugene, Ore.	1,000	P
KUBA—Yuba City, Calif.	500	P
WVOM—Brookline, Mass.	5,000	E

THE "IMPROVED HIKER'S ONE" KITSET

The Greatest Kitset We Have Ever Produced!

THIS set has stood the test of time and there are now thousands of Hikers Sets in use throughout the Dominion. Practically the only failures have been entirely due to bad and untidy workmanship. When making your set be neat, particularly with the coil and soldering. Attention to these points and success will be yours. In country districts (away from powerful local stations) reception of all the main New Zealand stations and many Australians can be had in the evenings; whilst your nearest YA station will come in during daylight even in summer, and all this without the need of a large and expensive "B" Battery.



Still Tops the Poll as the Most Popular Kitset in New Zealand!

A ONE-VALVE BATTERY RADIO THAT
REALLY *"PULLS"* THE STATIONS

It's Easy to Construct—Cheap to Buy—and Economical to Run!

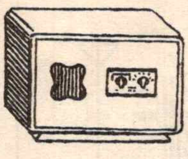
WRITE FOR *FREE* ILLUSTRATED LEAFLET.

PARTS LIST

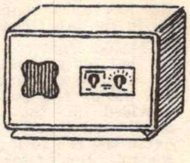
2 .0001 mfd. Mica Condensers
1 1 meg. Resistor
1 Variable Single Gang Condenser, .00035 or .0005 mfd.
1 500,000 Potentiometer with switch
9 Fahnstock Clips or Terminals
1 Valve, 49, 1Q5GT, 1C5GT
1 Valve Socket
1 1¼in. x 3¼in. Coil Former
1oz. 32 gauge Enamelled Wire
2 Coil Feet
14 Wood Screws
2 Nuts and Bolts
1 Coil Pushback Wire
1 Baseboard
1 Panel
2 Knobs
1 1½v. Dry Cell
1 9v. C. Battery

COMPLETE KIT OF PARTS
WITH OCTAL TUBE
AND BATTERIES

Cat. No. AK2004—
New Low Price **42/6**



The EASY BUILT BEDROOM A.C.3



THIS year we present a new arrival in our family of "Easybuilt" receivers. After a great deal of thought and burning of the midnight oil we decided to produce a receiver which we felt would have even greater appeal than our two previous efforts. This receiver is a simple A/C set which is designed to bring in the local stations at good speaker strength which is all we intend to claim for it, although in localities away from powerful stations reasonable distance reception may be expected.

A point well worth stressing here is the importance of aerial length with a set of this type. You will be well repaid if you spend a little time trying the effect of various aerial lengths on the receiver. As too long an aerial may cause an annoying "cross talk" effect between the locals and too short of course will prevent the reception of the weaker stations at full volume.

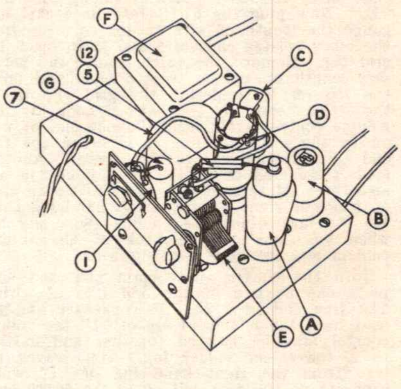
A glance at the circuit will show a receiver which is in essence similar in design to sets which have given outstanding results since the early days of radio. This then is our modern version of an old friend and we feel sure you will give him the welcome he deserves. The low cost and modest size of this receiver make it the answer to the "second set" problem for although we do not claim it will perform up to "superhet" standards it will definitely give satisfactory listening on any of the local stations. The simplicity of construction and the fact that there are no trimmers and padder condensers to be lined up, as in a superheterodyne receiver, makes this receiver an ideal one for the beginner in set construction to make a start with. Without further ado we will now get weaving on the actual business of having this fine little set transformed from a magazine article into a working model.

First check off the various parts against the list. Having done this the next thing is to mount the various parts. Now if you will look through this article you will notice that not only have we provided the conventional circuit diagram but also for the benefit of the less experienced we have also included our "Easybuilt" method. By using this method the new chum can check and cross check his every connection against the list and be sure his wiring up is O.K.

Now you will see list one sets out the various components that mount by means of nuts and bolts. That is the tuning condenser, valve sockets, volume control, etc. The small components which are the condensers and resistors all of which are soldered to the various points are set out in list number 2. So if you are not too good on circuit diagrams you can wire the set entirely from these lists. As you come to each component check it off the list and when the wiring is complete you can easily check up by seeing that the lists are completly ticked off.

Take a look at diagram "B." This gives you the actual placement of parts. Now the first thing to do is to mount the valve sockets, etc. When mounting the valve sockets A, B, and C, see that the key or notched hole points in the same direction as indicated in the diagram also place a solder lug under the securing nuts of each. One lug should go under the front nut of "A," another under the nut nearest the chassis edge in the case of "B" and the nut nearest the front of the chassis with "C." The rest of the parts may now be bolted down. That is the power transformer "F," power choke "G," tuning condenser "E," volume control "I," and under the chassis the speaker transformer "H." Do not mount the coil "D" yet as it may be knocked about when the chassis is turned over. Let us proceed now with the job of soldering up the valve sockets and various components. So make sure your soldered joints are good as a badly soldered connection can cause a lot of trouble in the way of noisy operation or poor reception.

Having got your iron heated and the various parts close handy, cut about 4in. off your coil of hook-up wire and strip off the insulation. Now solder one end to one of the 6.3v. lugs of power transformer "F" then lead the wire across to the C.T. lug and solder to this point then lead the wire on to the lug under the nut securing socket "C" and solder securely. Take care this bare wire contacts no other points than those mentioned. Check these connections off your list. Cut a 3½in. length of hook-up wire now and solder one end to the other 6.3v. lug of transformer "F." Now cut a 4½in. length of hook-up wire and solder one end together with the free end of the previous length on to pin No. 7 of socket "C." Lead the 4½in. length over to pin No. 7 of socket "B" and solder it on to this pin together with another 2in. length of wire, the free end this time connecting to pin No. 7 of socket "A."



TOP OF CHASSIS (DIAGRAM A)

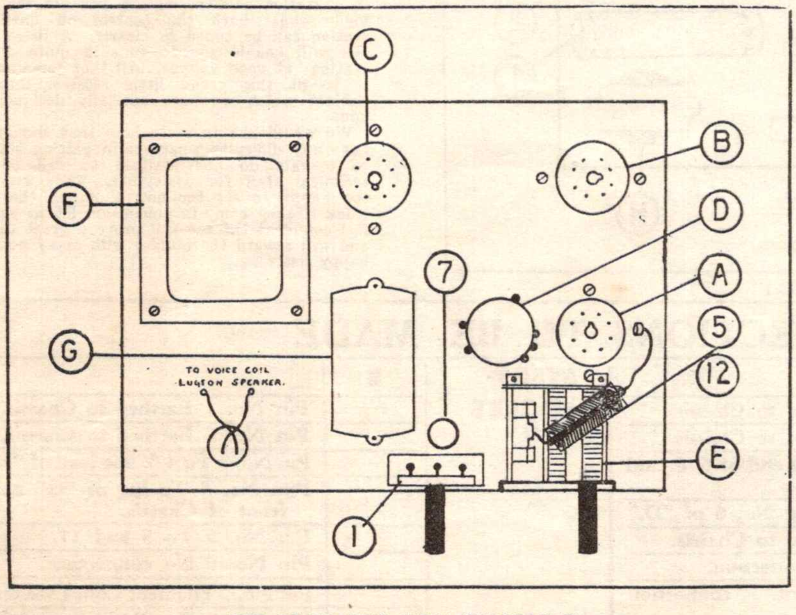
Run a short length of bare wire to Pins No. 1 and 2 of socket "C" and earth to the lug under the nut securing the socket. Do the same with Pins No. 1 and 2 of socket "B." Now with socket "A" a bare length of wire soldered to Pins 2, 1, 8, and 5 and earthed to the lug under the nut securing the socket. This completes all the earthing of the various sockets. Check all of these connections off your list.

Solder a short length of wire to one of the 280v. lugs on transformer "F" and solder the other end on to Pin No. 3 of "C." Now another length on to the other 280v. lug, the free end this time solders on to Pin No. 5 of "C." Check this off. Still on socket "C" solder one end of a 3in. length of wire on to Pin No. 8 and the other end on to the nearest lug of filter choke "G."

Look now at No. 9 on your list which is a 300 ohm. resistor. Actually you will receive two 600 ohm. resistors which are twisted together to make 300 ohms. Now No. 3 is a 10 mfd. condenser and this also has its ends twisted together with the 300 ohm. unit. Run a little solder along the twisted ends to make a good joint. The positive end of this unit is now soldered to pin No. 8 of "B." The negative end is earthed by soldering it to Pin No. 1 of "C."

Let us get the other two electrolytics wired up now. That is 1 and 2 on the list. Twist the two negative leads together and earth by soldering on to the earthed 6.3v. lug on transformer "F." The positive ends now. One to each lug of filter choke "G." Cut a 5in. length of wire now and solder one end on to pin No. 4 of socket "B." Now pick up 10 the 50,000 ohm. resistor and 13 the .25 meg. resistor, solder one end of these together with the free end of the 5in. length of wire and one of the covered leads of speaker transformer "H" on to "G" the filter choke, use the lug nearest the front of the chassis. Twist the free end of 13 with one end of 8 the .01 condenser and one end of 6 the .0025 condenser and solder on to pin No. 3 of socket "A." Earth the free end of 6.

Now the free end of 8 is soldered together with one end of 11 the 500,000 ohm resistor on to pin No. 5 of socket "B," solder the free end of 11 on to pin No. 2 of socket "C" which is or should be earthed. Have a glance at diagram "C" once in a while as this will help you in placing the various parts all of which have been arranged with an eye to easy wiring. Speaker transformer "H" has a covered lead lying round loose so let us get rid of it by soldering a length of wire on to it and run this over to pin No. 3 of socket "B." Before soldering, however, slip a length of spaghetti



TOP OF CHASSIS VIEW (DIAGRAM B).

6X5GT SOCKET	**C**	Pin No. 1 Earthed to Chassis.
		Pin No. 2 Earthed to Chassis.
		Pin No. 3 To one 280v. lug of "F."
		Pin No. 4 No connection.
		Pin No. 5 To other 280v. lug of "F."
		Pin No. 6 No connection.
		Pin No. 7 To one 6.3v. lug on "F."
		Pin No. 8 To lug of "G" nearest back of chassis.
R.F. COIL WITH REACTION	**D**	Lug 1 To aerial.
		Lug 2 Earthed to Chassis.
		Lug 3 To fixed plates of tuning condenser "E."
		Lug 4 Earthed to Chassis.
		Lug 5 To centre lug of vol. control "I."
		Lug 6 To pin No. 4 of "A."
TUNING CONDENSER	**E**	Fixed plates to No. 3 lug of coil "D" and one end of 5 and 12.
POWER TRANSFORMER	**F**	230V. LUGS WIRED TO POWER FLEX
		6.3v. lugs: One lug is earthed to chassis and also used as earthing point for 1 and 2. The other 6.3v. lug is connected to Pin No. 7 of "A," "B," and "C."
		280v. C.T. The 280v. lugs wire up to pins No. 3 and 5 of "C." The C.T. lug is earthed. Do not use the 5v. lugs.
FILTER CHOKE	**G**	Lug nearest front of Chasiss has the following conections made to it. One end of 10 and 13, also one covered lead of "H," positive end of 1 and Pin No. 4 of "B."
		Other lug connects to Pin No. 8 of "C" and positive (+) end of 2.
SPEAKER TRANSFORMER	**H**	One covered lead to front lug of "G," other covered lead to Pin No. 3 of "B."
		Enamelled leads feed through Chassis and connect to two voice coil lugs on side of speaker frame.
.5 MEG. VOLUME CONTROL	**I**	Left hand lug earthed to Chassis.
		Centre lug to one end of 7, also to lug No. 5 on coil "D."
		Right hand lug to one end of 10.

SMALL COMPONENT CONNECTIONS TO BE MADE

16 Mfd Electrolytic	**1**	(+) Positive end to one lug of "G."
		(—) Negative end earthed to Chassis.
16 Mfd Electrolytic	**2**	(+) Positive end to other lug of "G."
		(—) Negative end earthed to Chassis.
10 Mfd Electrolytic	**3**	(+) Positive end to Pin No. 8 of "B."
		(—) Negative end to Pin No. 1 of "C" which is earthed to Chassis.
.004 Mica condenser	**4**	One end to Pin No. 3 of "B."
		Other end earthed to Chassis.
.0001 Mica condenser	**5**	One end to fixed plates of tuning condenser.
		Other end to grid cap on 6U7G valve.
.00025 Mica condenser	**6**	One end to Pin No. 3 of "A."
		Other end earthed to Chassis.
.25 Tubular condenser	**7**	One end to centre lug of vol. control "I."
		Other end earthed to Chassis.
.01 Tubular condenser	**8**	One end to Pin No. 3 of "A."
		Other end to Pin No. 5 of "B."
300 Ohm Resistor (See Text)	**9**	One end to Pin No. 8 of "B."
		Other end to Pin No. 1 of "C" which is earthed to Chassis.
50,000 Ohm Resistor	**10**	One end to lug of "G" nearest front of Chassis.
		Other end to right hand lug of vol. control "I."
500,000 Ohm Resistor	**11**	One end to Pin No. 5 of "B."
		Other end to Pin No. 2 of "C" which is earthed to Chassis.
2 Megohm Resistor	**12**	One end to grid cap of 6U7G valve.
		Other end to fixed plates of tuning condenser.
.25 Meg Resistor	**13**	One end to Pin No. 3 of "A."
		Other end to lug of "G" nearest front of Chassis.

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Type	Name	Tube Dimensions and Socket Connections		Cathode Type and Rating			Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias ■ Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Transconductance (Grid-plate) µmhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	Type
		Dimen.	S. C.	C. T.	Volts	Amp.												
1LH4	Diode High-Mu Triode	B5	5AG	D.C. F	1.4	0.05	Triode Unit as Class A Amplifier		For other characteristics, refer to Type 1H5-GT.									**1LH4**
1LN5	RF Amplifier Pentode	B5	7AO	D.C. F	1.4	0.05	Class A Amplifier	90	0	90	0.35	1.6	1.1§	800	——	——	——	**1LN5**
1N5-GT	RF Amplifier Pentode	C3	GT-5Y✱	D.C. F	1.4	0.05	Class A Amplifier	90	0	90	0.3	1.2	1.5§	750	——	——	——	**1N5-GT**
1N6-G	Diode—Power Amplifier Pentode	D1	G-7AM	D.C. F	1.4	0.05	Pentode Unit as Class A Amplifier	90	− 4.5	90	0.7	3.4	300000	800	——	25000	0.1	1N6-G
1P5-GT	Supercontrol RF Amplifier Pentode	C3	GT-5Y✱	D.C. F	1.4	0.05	Class A Amplifier	90	0	90	0.7	2.3	800000	750	——	——	——	**1P5-GT**
1Q5-GT	Beam Power Amplifier	C3	G-6AF	D.C. F	1.4	0.1	Class A Amplifier	110	− 6.6	110	1.4	10.0	100000	2200	——	8000	0.40	**1Q5-GT**
1R5	Pentagrid Converter▲	B0	7AT	D.C. F	1.4	0.05	Converter	45 90	0 0	45 67.5	1.9 3.2	0.7 1.6	600000 600000	Grid #1 Resistor, 100000 ohms. Conversion Transcond., 300 micromhos.				**1R5**
1S4	Power Amplifier Pentode	B0	7AV	D.C. F	1.4	0.1	Class A Amplifier	45 90	− 4.5 − 7.0	45 67.5	0.8 1.4	3.8 7.4	100000 100000	1250 1575	——	8000 8000	0.065 0.27	**1S4**
1S5	Diode-Pentode	B0	6AU	D.C. F	1.4	0.05	Pentode Unit as AF Amplifier	Plate Supply, 90 volts applied through 1 meg. resistor. Screen Supply, 90 volts applied through 3 meg. resistor. Grid Bias, 0 volts. Grid Resistor, 10 megohms. Voltage Gain, 50 approx.										**1S5**
1T4	Super-Control RF Amplifier Pentode	B0	6AR	D.C. F	1.4	0.05	Class A Amplifier	45 90	0 0	45 67.5	0.7 1.4	1.7 3.5	350000 500000	700 900	——	——	——	**1T4**
1T5-GT	Beam Power Amplifier	C3	G-6X	D.C. F	1.4	0.05	Class A Amplifier	90	− 6.0	90	0.8	6.5	——	1150	——	14000	0.17	**1T5-GT**
1U4	RF Amplifier Pentode	B0	6AR	D.C. F	1.4	0.05	Class A Amplifier	90	0	90	0.45	1.6	1.5§	900	——	——	——	**1U4**
1-V	Half-Wave Rectifier	D5	4G	H	6.3	0.3	With Capacitive-Input Filter	Max. A-C Plate Volts (RMS), 325 Max. D-C Output Ma., 45 Min. Total Effective Plate-Supply Impedance: Up to 117 volts, 0 ohms; at 150 volts, 30 ohms; at 325 volts, 75 ohms.										**1-V**
2A3	Power Amplifier Triode	E3	4D	F	2.5	2.5	Class A Amplifier	250	−45.0	——	——	60.0	800	5250	4.2	2500	3.5	**2A3**
							Push-Pull Class AB$_1$ Amplifier	300 300	Cath. Bias, 780 ohms♠ −62 volts, fixed bias			80.0♠ 80.0♠	——	——	——	5000 3000	10.0† 15.0†	
2A4-G	Gas-Triode	D3	G-5S$_7$	F	2.5	2.5	Relay Service	Peak Anode Voltage, 200 max. volts, inverse or forward. Peak Anode Current, 1.25 max. amperes. Average Anode Current, 0.1 max. ampere.										2A4-G
2A5	Power Amplifier Pentode	D12	6B	H	2.5	1.75	Amplifier	For other characteristics, refer to Type 6F6-G.										**2A5**
2A6	Duplex-Diode High-Mu Triode	D9	6G	H	2.5	0.8	Triode Unit as Amplifier	For other characteristics, refer to Type 6SQ7.										**2A6**
2A7	Pentagrid Converter ⊙	D9	7C	H	2.5	0.8	Converter	For other characteristics, refer to Type 6A8.										**2A7**
2B7	Duplex-Diode Pentode	D9	7D	H	2.5	0.8	Pentode Unit as Amplifier	For other characteristics, refer to Type 6B8-G.										**2B7**
2E5	Electron-Ray Tube	D5	6R	H	2.5	0.8	Visual Indicator	For other characteristics, refer to Type 6E5.										**2E5**
3A8-GT	Diode-Triode RF Amplifier Pentode	C5a	8AS	D.C. F	1.4 2.8	0.1 0.05	Triode Unit as Class A Amplifier	90	0	——	——	0.2	200000	325	65	——	——	3A8-GT
							Pentode Unit as Class A Amplifier	90	0	90	0.5	1.5	800000	750	——	——	——	
3Q4	Power Amplifier Pentode	B0	7BA	D.C. F	1.4 2.8	0.1 0.05	Class A Amplifier	For other characteristics, refer to Type 3V4										**3Q4**
3Q5-GT	Beam Power Amplifier	C3	G-7AP	D.C. F	1.4 2.8	0.1 0.05	Class A Amplifier	110 110	− 6.6 − 6.6	110 110	1.4 1.1	10.0 8.5	100000 110000	2200 2000	——	8000 8000	0.40 0.33	**3Q5-GT**
3S4	Power Amplifier Pentode	B0	7BA	D.C. F	1.4 2.8	0.1 0.05	Class A Amplifier	90 90	− 7 − 7	67.5 67.5	1.4 1.1	7.4 6.1	100000 100000	1575 1425	—— ——	8000 8000	0.27 0.235	**3S4**
3V4	Power Amplifier Pentode	B0	6BX	D.C. F	1.4 2.8	0.1 0.05	Class A Amplifier	90 90	− 4.5 − 4.5	90 90	2.1 1.7	9.5 7.7	100000 120000	2150 2000	—— ——	10000 10000	0.27 0.24	**3V4**
5T4	Full-Wave Rectifier	D7	5T	F	5.0	2.0	With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 450 Max. Peak Inverse Volts, 1550 Max. D-C Output Ma., 225 Max. Peak Plate Ma., 675 Min. Total Effect. Supply Imped. per Plate, 150 ohms										**5T4**
							With Inductive-Input Filter	Max. A-C Volts per Plate (RMS), 550 Max. Peak Inverse Volts, 1550 Max. D-C Output Ma., 225 Max. Peak Plate Ma., 675 Min. Value of Input Choke, 3 henries										
5TP4	Projection Kinescope	H1	12C	H	6.3	0.6	For Picture Reproduction	Electrostatic Focus, Magnetic Deflection Minimum Useful Screen Diameter, 4½ in. Phosphor: White Fluorescence, Medium Persistence Max. Anode—No. 2 Volts, 27000										**5TP4**
5U4-G	Full-Wave Rectifier	E2	G-5T‡	F	5.0	3.0	With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 450 Max. Peak Inverse Volts, 1550 Max. D-C Output Ma., 225 Max. Peak Plate Ma., 675 Min. Total Effect. Supply Imped. per Plate, 75 ohms										**5U4-G**
							With Inductive-Input Filter	Max. A-C Volts per Plate (RMS), 550 Max. Peak Inverse Volts, 1550 Max. D-C Output Ma., 225 Max. Peak Plate Ma., 675 Min. Value of Input Choke, 3 henries										
5V4-G	Full-Wave Rectifier	D10	G-5L‡	H	5.0	2.0	With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 375 Max. Peak Inverse Volts, 1400 Max. D-C Output Ma., 175 Max. Peak Plate Ma., 525 Min. Total Effect. Supply Imped. per Plate, 100 ohms										**5V4-G**
							With Inductive-Input Filter	Max. A-C Volts per Plate (RMS), 500 Max. Peak Inverse Volts, 1400 Max. D-C Output Ma., 175 Max. Peak Plate Ma., 525 Min. Value of Input Choke, 4 henries										
5W4	Full-Wave Rectifier	C2	5T	F	5.0	1.5	With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 350 Max. Peak Inverse Volts, 1400 Max. D-C Output Ma., 100 Max. Peak Plate Ma., 300 Min. Total Effect. Supply Imped. per Plate, 50 ohms										**5W4**
							With Inductive-Input Filter	Max. A-C Volts per Plate (RMS), 500 Max. Peak Inverse Volts, 1400 Max. D-C Output Ma., 100 Max. Peak Plate Ma., 300 Min. Value of Input Choke, 6 henries										
5W4-GT	Full-Wave Rectifier	C7	G-5T‡	F	5.0	1.5		For other ratings, refer to Type 5W4.										5W4-GT
5X4-G	Full-Wave Rectifier	E2	G-5Q	F	5.0	3.0		For other ratings, refer to Type 5U4-G.										**5X4-G**
5Y3-GT	Full-Wave Rectifier	C7	G-5T‡	F	5.0	2.0	With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 350 Max. Peak Inverse Volts, 1400 Max. D-C Output Ma., 125 Max. Peak Plate Ma., 375 Min. Total Effect. Supply Imped. per Plate, 50 ohms										**5Y3-GT**
							With Inductive-Input Filter	Max. A-C Volts per Plate (RMS), 500 Max. Peak Inverse Volts, 1400 Max. D-C Output Ma., 125 Max. Peak Plate Ma., 375 Min. Value of Input Choke, 5 henries										
5Y4-G	Full-Wave Rectifier	D10	G-5Q	F	5.0	2.0		For other ratings, refer to Type 5Y3-GT.										**5Y4-G**
5Z3	Full-Wave Rectifier	E3	4C	F	5.0	3.0		For other ratings, refer to Type 5U4-G.										**5Z3**
5Z4	Full-Wave Rectifier	C2	5L	H	5.0	2.0	With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 350 Max. Peak Inverse Volts, 1400 Max. D-C Output Ma., 125 Max. Peak Plate Ma., 375 Min. Total Effect. Supply Imped. per Plate, 50 ohms										**5Z4**
							With Inductive-Input Filter	Max. A-C Volts per Plate (RMS), 500 Max. Peak Inverse Volts, 1400 Max. D-C Output Ma., 125 Max. Peak Plate Ma., 375 Min. Value of Input Choke, 5 henries										
6A3	Power Amplifier Triode	E3	4D	F	6.3	1.0	Amplifier	For other characteristics, refer to Type 6B4-G.										6A3
6A4/LA	Power Amplifier Pentode	D12	5B	F	6.3	0.3	Class A Amplifier	100 180	− 6.5 −12.0	100 180	1.6 3.9	9.0 22.0	83250 45500	1200 2200	——	11000 8000	0.31 1.40	**6A4/LA**
6A6	Twin-Triode Amplifier	D12	7B	H	6.3	0.8	Amplifier	For other characteristics, refer to Type 6N7-GT.										**6A6**
6A7	Pentagrid Converter ⊙	D9	7C	H	6.3	0.3	Converter	For other characteristics, refer to Type 6A8.										**6A7**
6A7S	Pentagrid Converter ⊙	D9	7C	H	6.3	0.3	Converter	For other characteristics, refer to Type 6A8.										6A7S

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CIRCUIT BOOK 2/6 — INSTRUCTION COURSE 2/6 — DATA BOOK 3/6

LOOK FOR OUR WAR SURPLUS BARGAINS!

RCA Type	Name	Tube Dimensions and Socket Connections		Cathode Type and Rating			Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias ■ Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-Conductance (Grid-plate) µmhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	RCA Type
		Dimen.	S. C.	C. T.	Volts	Amp.												
6C5	Detector★ Amplifier Triode	B3	6Q	H	6.3	0.3	Class A Amplifier	250	− 8.0	—	—	8.0	10000	2000	20	—	—	6C5
								90♥ 300♥	Cath. Bias, 6400 ohms. Cath. Bias, 5300 ohms.	Grid Resistor,** 0.25 megohm.					Gain per stage = 11 Gain per stage = 13			
							Bias Detector	250	−17.0 approx.	Plate current to be adjusted to 0.2 milliampere with no signal.								
6C5-GT	Detector★ Amplifier Triode	C3	GT-6Q&	H	6.3	0.3	Amplifier Detector	For other characteristics, refer to Type 6C5.										6C5-GT
6C6	Triple-Grid Detector Amplifier	D13	6F	H	6.3	0.3	Amplifier Detector	For other characteristics, refer to Type 6J7.										6C6
6C7	Duplex-Diode Triode	D9	7G	H	6.3	0.3	Triode Unit as Class A Amplifier	250	− 9.0	—	—	4.5	16000	1250	20	—	—	6C7
6C8-G	Twin-Triode Amplifier	D8	G-8G	H	6.3	0.3	Each Unit as Amplifier	250	− 4.5	—	—	3.2	22500	1600	36	—	—	6C8-G
6D6	Triple-Grid Supercontrol Amplifier	D13	6F	H	6.3	0.3	Amplifier Mixer	For other characteristics, refer to Type 6U7-G.										6D6
6D7	Triple-Grid Detector Amplifier	D13	7H	H	6.3	0.3	Amplifier Detector	For other characteristics, refer to Type 6J7.										6D7
6D8-G	Pentagrid Converter ●	D8	G-8A‡	H	6.3	0.15	Converter	135 250	− 3.0 − 3.0	67.5 100	1.7 2.6	1.5 3.5	600000 400000	Anode-Grid (#2): 250■ max. volts, 4.3 ma. Oscillator-Grid (#1) Resistor ●. Conversion Transcond., 550 micromhos.				6D8-G
6E5	Electron-Ray Tube	D4	6R	H	6.3	0.3	Visual Indicator	Plate & Target Supply = 125 volts. Triode Plate Resistor = 1.0 meg. Target Current = 0.8 ma. Grid Bias, −4.0 volts; Shadow Angle, 0°. Bias, 0 volts; Angle, 90°; Plate Current, 0.1 ma.										6E5
								Plate & Target Supply = 250 volts. Triode Plate Resistor = 1.0 meg. Target Current = 2.0 ma. Grid Bias, −7.5 volts; Shadow Angle, 0°. Bias, 0 volts; Angle, 90°; Plate Current, 0.2 ma.										
6E6	Twin-Triode Power Amplifier	D12	7B	H	6.3	0.6	Push-Pull Class A Amplifier	180 250	−20.0 −27.5	—	—	Power Output is for one tube at stated plate-to-plate load.				15000 14000	0.75 1.60	6E6
6E7	Triple-Grid Supercontrol Amplifier	D13	7H	H	6.3	0.3	Amplifier	For other characteristics, refer to Type 6U7-G.										6E7
6F5	High-Mu Triode	C1	5M	H	6.3	0.3	Amplifier	For other characteristics, refer to Type 6SF5.										6F5
6F5-GT	High-Mu Triode	C3	G-5M‡	H	6.3	0.3	Amplifier	For other characteristics, refer to Type 6SF5.										6F5-GT
6F6	Power Amplifier Pentode	C2	7S	H	6.3	0.7	Amplifier	For other characteristics, refer to Type 6F6-G.										6F6
6F6-G	Power Amplifier Pentode	D10	G-7S‡	H	6.3	0.7	Pentode Class A Amplifier	250 285	−16.5 −20.0	250 285	6.5 7.0	34.0 38.0	80000 78000	2500 2550	—	7000 7000	3.2 4.8	6F6-G
							Triode☐ Class A Amplifier	250	−20.0	—	—	31.0	2600	2600	6.8	4000	0.85	
							Pentode Push-Pull Class A Amplifier	315 315	Cath. Bias −24.0	285 285	12.0♠ 12.0♠	62.0♠ 62.0♠	Cath. Bias Resistor, 320 ohms♠ —	 —	 —	10000 10000	10.5† 11.0†	
							Pentode Push-Pull Class AB_1 Amplifier	375 375	Cath. Bias −26.0	250 250	8.0♠ 5.0♠	54.0♠ 34.0♠	Cath. Bias Resistor, 340 ohms♠ —	 —	 —	10000 10000	19.0† 18.5†	
							Triode Push-Pull☐ Class AB_1 Amplifier	350 350	Cath. Bias −38.0	—	—	50.0♠ 48.0♠	Cath. Bias Resistor, 730 ohms♠ —	 —	 —	10000 6000	9.0† 13.0†	
6F6-GT	Power Amplifier Pentode	C5b	G-7S‡	H	6.3	0.7	Amplifier	For other characteristics, refer to Type 6F6-G.										6F6-GT
6F7	Triode-Pentode	D9	7E	H	6.3	0.3	Triode Unit as Class A Amplifier	100	− 3.0 min.	—	—	3.5	16000	500	8	—	—	6F7
							Pentode Unit as Class A Amplifier	100 250	− 3.0 min.	100 100	1.6 1.5	6.3 6.3	290000 850000	1050 1100	—	—	—	
							Pentode Unit as Mixer	250	−10.0	100	0.6	2.8	Oscillator Peak Volts = 7.0. Conversion Transcond. = 300 micromhos.					
6F8-G	Twin-Triode Amplifier	D8	G-8G	H	6.3	0.6	Each Unit as Amplifier	For other characteristics, refer to Type 6J5.										6F8-G
6G6-G	Power Amplifier Pentode	D3	G-7S‡	H	6.3	0.15	Pentode Class A Amplifier	135 180	− 6.0 − 9.0	135 180	2.0 2.5	11.5 15.0	170000 175000	2100 2300	—	12000 10000	0.6 1.1	6G6-G
							Triode☐ Class A Amplifier	180	−12.0	—	—	11.0	4750	2000	9.5	12000	0.25	
6H6	Twin Diode	A1a	7Q	H	6.3	0.3	Voltage Doubler	Max. A-C Supply Volts per Plate (RMS), 150 Max. D-C Output Ma., 8. min. Total Effect. Plate-Supply Imped. per Plate: half-wave, 30 ohms; full-wave, 15 ohms.										6H6
							Half-Wave Rectifier	Max. A-C Plate Volts (RMS), 150 Max. D-C Output Ma., 8 per Plate					Min. Total Effective Plate-Supply Impedance: up to 117 volts, 15 ohms; at 150 volts, 40 ohms.					
6H6-GT	Twin Diode	C3	G-7Q‡‡	H	6.3	0.3	Detector Rectifier	For other ratings, refer to Type 6H6.										6H6-GT
6J5	Detector Amplifier Triode	B3	6Q	H	6.3	0.3	Class A Amplifier	90 250	0 − 8.0	—	—	10.0 9.0	6700 7700	3000 2600	20 20	—	—	6J5
6J5-GT	Detector Amplifier Triode	C3	GT-6Q&	H	6.3	0.3	Amplifier	For other characteristics, refer to Type 6J5.										6J5-GT
6J6	Twin Triode	B0	7BF	H	6.3	0.45	Each Unit as Class A Amplifier	100	Cathode Resistor, for both units, 50 ohms			8.5	7100	5300	38	—	—	6J6
							Push-Pull Class C Amplifier	150	−10.0	Cath. Res., 220 ohms, both units		30.0	Grid Current, 16 ma. Driving Power, 0.35 watt.			—	3.5	
6J7	Triple-Grid Detector Amplifier	C1	7R	H	6.3	0.3	Pentode Class A RF Amplifier	100 250	− 3.0 − 3.0	100 100	0.5 0.5	2.0 2.0	1.0§ 1.0 +§	1185 1225	—	—	—	6J7
							Pentode Class A AF Amplifier	90✱ 300✱	Cath. Bias, 2600 ohms. Screen Resistor = 1.2 meg. Cath. Bias, 1200 ohms. Screen Resistor = 1.2 meg.					Grid Resistor,** 0.5 megohm.	Gain per stage = 85 Gain per stage = 140			
							Pentode Bias Detector	250	− 4.3	100	Cathode Current 0.43 ma.		—	Plate Resistor, 500000 ohms. Grid Resistor,** 250000 ohms.				
							Triode✝ Class A Amplifier	180 250	− 5.3 − 8.0	—	—	5.3 6.5	11000 10500	1800 1900	20 20	—	—	
6J7-G	Triple-Grid Detector Amplifier	D8	G-7R‡‡	H	6.3	0.3	Amplifier Detector	For other characteristics, refer to Type 6J7.										6J7-G
6J7-GT	Triple-Grid Detector Amplifier	C3	GT-7R&	H	6.3	0.3	Amplifier	For other characteristics, refer to Type 6J7.										6J7-GT
6J8-G	Triode-Heptode Converter	D8	G-8H	H	6.3	0.3	Triode Unit as Oscillator	100 250■	Triode-Grid Resistor ●			4.0 5.8	Triode-Grid & Heptode-Grid Current, 0.3 ma. Triode-Grid & Heptode-Grid Current, 0.4 ma.					6J8-G
							Heptode Unit as Mixer	100 250	− 3.0 − 3.0	100 100	3.0 2.9	1.4 1.3	900000 4.0§	Conversion Transcond., 260 micromhos. Conversion Transcond., 290 micromhos.				
6K5-GT	High-Mu Triode	D8	GT-5U	H	6.3	0.3	Class A Amplifier	100 250	− 1.5 − 3.0	—	—	0.35 1.1	78000 50000	900 1400	70 70	—	—	6K5-GT

Discontinued types are shown in light face. Metal and miniature tubes are identified respectively by a narrow or a wide riser preceding or following the type designation.

RCA Type	Name	Tube Dimensions and Socket Connections: Dimen.	Tube Dimensions and Socket Connections: S. C.	Cathode Type and Rating: C. T.	Cathode Type and Rating: Volts	Cathode Type and Rating: Amp.	Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias ■ Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-Conductance (Grid-plate) µmhos	Amplification Factor	Load for Stated Power Output Ohms	P Ou- put Watts	Type
6SH7	HF Amplifier Pentode	B3	8BK	H	6.3	0.3	Class A Amplifier	100 250	− 1.0 − 1.0	100 150	2.1 4.1	5.3 10.8	350000 900000	4000 4900	——	——	——	6SH7
6SJ7	Triple-Grid Detector Amplifier	B3	8N	H	6.3	0.3	Class A Amplifier	100 250	− 3.0 − 3.0	100 100	0.9 0.8	2.9 3.0	700000 1.0+§	1575 1650	——	——	——	6SJ7
								90 ✖ 300 ✖	Cath. Bias, 1700 ohms. Cath. Bias, 860 ohms.			Grid Resistor,** 0.5 megohm.				Gain per stage = 93 Gain per stage = 167		
6SJ7-GT	Triple-Grid Detector Amplifier	C3	GT-8N♀	H	6.3	0.3	Amplifier	For other characteristics, refer to Type 6SJ7.										6SJ7-GT
6SK7	Triple-Grid Supercontrol Amplifier	B3	8N	H	6.3	0.3	Class A Amplifier	100 250	− 1.0 − 3.0	100 100	4.0 2.6	13.0 9.2	120000 800000	2350 2000	——	——	——	6SK7
6SK7-GT	Triple-Grid Supercontrol Amplifier	C3	GT-8N♀	H	6.3	0.3	Amplifier	For other characteristics, refer to Type 6SK7.										6SK7-GT
6SL7-GT	Twin-Triode Amplifier	C3	8BD	H	6.3	0.3	Each Unit as Amplifier	250	− 2.0	——	——	2.3	44000	1600	70	——	——	6SL7-GT
6SN7-GT	Twin-Triode Amplifier	C3	8BD	H	6.3	0.6	Each Unit as Amplifier	For other characteristics, refer to Type 6J5.										6SN7-GT
6SQ7	Duplex-Diode High-Mu Triode	B3	8Q	H	6.3	0.3	Triode Unit as Class A Amplifier	100 250	− 1.0 − 2.0	——	——	0.4 0.9	110000 91000	900 1100	100 100	—— ——	—— ——	6SQ7
								90 ✖ 300 ✖	Cath. Bias, 11000 ohms. Cath. Bias, 3900 ohms.			Grid Resistor, ** 0.5 megohm.				Gain per stage = 40 Gain per stage = 53		
6SQ7-GT	Duplex-Diode High-Mu Triode	C3	GT-8Q♀	H	6.3	0.3	Triode Unit as Amplifier	For other characteristics, refer to Type 6SQ7.										6SQ7-GT
6SR7	Duplex-Diode Triode	B3	8Q	H	6.3	0.3	Triode Unit as Class A Amplifier	250	− 9.0	——	——	9.5	8500	1900	16	10000	0.3	6SR7
6SS7	Triple-Grid Supercontrol Amplifier	B3	8N	H	6.3	0.15	Class A Amplifier	100 250	− 1.0 − 3.0	100 100	3.1 2.0	12.2 9.0	120000 1.0§	1930 1850	——	——	——	6SS7
6ST7	Duplex-Diode Triode	B3	8Q	H	6.3	0.15	Triode Unit as Amplifier	For other characteristics, refer to Type 6SR7.										6ST7
6SZ7	Duplex-Diode High-Mu Triode	B3	8Q	H	6.3	0.15	Triode Unit as Class A Amplifier	100 250	− 1.0 − 3.0	——	——	0.8 1.0	61000 58000	1150 1200	70 70	—— ——	—— ——	6SZ7
6T7-G	Duplex-Diode High-Mu Triode	D8	G-7V‡	H	6.3	0.15	Triode Unit as Class A Amplifier	135 250	− 1.5 − 3.0	——	——	0.9 1.2	65000 62000	1000 1050	65 65	——	——	6T7-G
								90 ✖ 300 ✖	Cath. Bias, 8300 ohms. Cath. Bias, 4580 ohms.			Grid Resistor,** 0.5 megohm.				Gain per stage = 30 Gain per stage = 40		
6U5/6G5	Electron-Ray Tube	D4	6R	H	6.3	0.3	Visual Indicator	Plate & Target Supply = 100 volts. Triode Plate Resistor = 0.5 meg. Target Current = 1.0 ma. Grid Bias, −8 volts; Shadow Angle, 0°. Bias, 0 volts; Angle, 90°; Plate Current, 0.19 ma.										6U5/6G5
								Plate & Target Supply = 250 volts. Triode Plate Resistor = 1.0 meg. Target Current = 4.0 ma. Grid Bias, −22 volts; Shadow Angle, 0°. Bias, 0 volts; Angle, 90°; Plate Current, 0.24 ma.										
6U7-G	Triple-Grid Supercontrol Amplifier	D12a	G-7R‡	H	6.3	0.3	Class A Amplifier	100 250	− 3.0 − 3.0	100 100	2.2 2.0	8.0 8.2	250000 800000	1500 1600	——	——	——	6U7-G
							Mixer in Superheterodyne	100 250	−10.0 −10.0	100 100	——	——	Oscillator Peak Volts = 7.0					
6V6	Beam Power Amplifier	C2	7AC	H	6.3	0.45	Amplifier	For other characteristics, refer to Type 6V6-GT.										6V6
6V6-GT	Beam Power Amplifier	C3	G-7AC‡	H	6.3	0.45	Single-Tube Class A Amplifier	180 250 315	− 8.5 −12.5 −13.0	180 250 225	3.0 4.5 2.2	29.0 45.0 34.0	58000 52000 77000	3700 4100 3750	—— —— ——	5500 5000 8500	2.0 4.5 5.5	6V6-GT
							Push-Pull Class AB_1 Amplifier	250 285	−15.0 −19.0	250 285	5.0♠ 4.0♠	70.0♠ 70.0♠	—— ——	—— ——	—— ——	10000 8000	10.0† 14.0†	
6V7-G	Duplex-Diode Triode	D8	G-7V‡	H	6.3	0.3	Triode Unit as Amplifier	For other characteristics, refer to Type 85.										6V7-G
6W7-G	Triple-Grid Detector Amplifier	D8	G-7R‡	H	6.3	0.15	Class A Amplifier	250	− 3.0	100	0.5	2.0	1.5§	1225	——	——	——	6W7-G
6X4	Full-Wave Rectifier	B1a	5BS	H	6.3	0.6	With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 325 Max. Peak Inverse Volts, 1250				Max. D-C Output Ma., 70 Max. Peak Plate Ma., 210			Min. Total Effect. Supply Imped. per Plate, 150 ohms			6X4
							With Inductive-Input Filter	Max. A-C Volts per Plate (RMS), 450 Max. Peak Inverse Volts, 1250				Max. D-C Output Ma., 70 Max. Peak Plate Ma., 210			Min. Value of Input Choke, 8 henries			
6X5	Full-Wave Rectifier	C2	6S	H	6.3	0.6		For other ratings, refer to Type 6X5-GT.										6X5
6X5-GT	Full-Wave Rectifier	C3	G-6S‡	H	6.3	0.6	With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 325 Max. Peak Inverse Volts, 1250				Max. D-C Output Ma., 70 Max. Peak Plate Ma., 210			Min. Total Effect. Supply Imped. per Plate, 150 ohms			6X5-GT
							With Inductive-Input Filter	Max. A-C Volts per Plate (RMS), 450 Max. Peak Inverse Volts, 1250				Max. D-C Output Ma., 70 Max. Peak Plate Ma., 210			Min. Value of Input Choke, 8 henries			
6Y5	Full-Wave Rectifier	D5	6J	H	6.3	0.8	With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 350 Max. D-C Output Ma., 50										6Y5
6Y6-G	Beam Power Amplifier	D10	G-7AC‡	H	6.3	1.25	Single-Tube Class A Amplifier	135 200	−13.5 −14.0	135 135	3.5 2.2	58.0 61.0	9300 18300	7000 7100	—— ——	2000 2600	3.6 6.0	6Y6-G
6Y7-G	Twin-Triode Amplifier	D3	G-8B‡	H	6.3	0.6	Class B Amplifier	For other characteristics, refer to Type 79.										6Y7-G
6Z5	Full-Wave Rectifier	D5	6K	H	6.3 12.6	0.8 0.4	With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 230 Max. D-C Output Ma., 60										6Z5
6Z7-G	Twin-Triode Amplifier	D3	G-8B‡	H	6.3	0.3	Class B Amplifier	135 180	0 0	——	——	Power Output is for one tube at stated plate-to-plate load.				9000 12000	2.5 4.2	6Z7-G
6ZY5-G	Full-Wave Rectifier	D3	G-6S‡	H	6.3	0.3	With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 325 Max. Peak Inverse Volts, 1250				Max. D-C Output Ma., 40 Max. Peak Plate Ma., 120			Min. Total Effect. Supply Imped. per Plate, 225 ohms			6ZY5-G
							With Inductive-Input Filter	Max. A-C Volts per Plate (RMS), 450 Max. Peak Inverse Volts, 1250				Max. D-C Output Ma., 40 Max. Peak Plate Ma., 120			Min. Value of Input Choke, 13.5 henries			
7A4	Detector Amplifier Triode	B5	$5AC_2$	H	6.3	0.3	Amplifier	For other characteristics, refer to Type 6J5.										7A4
7A5	Beam Power Amplifier	C6	6AA	H	6.3	0.75	Class A Amplifier	110 125	− 7.5 − 9.0	110 125	3.0 3.3	40.0 44.0	14000 17000	5800 6000	——	2500 2700	1.5 2.2	7A5
7A6	Twin Diode	B5	7AJ	H	6.3	0.15	Detector Rectifier	Maximum A-C Voltage per Plate..........150 Volts, RMS Maximum D-C Output Current per plate.......... 8 Milliamperes										7A6
7A7	Triple-Grid Supercontrol Amplifier	B5	8V	H	6.3	0.3	Class A Amplifier	For other characteristics, refer to Type 6SK7.										7A7
7A8	Octode Converter	B5	8U	H	6.3	0.15	Converter	100 250	− 3.0 − 3.0	75 100	2.7 3.2	1.8 3.0	650000 700000	Anode-Grid (#2): 250 ◣ max. volts, 4.2 ma. Oscillator-Grid (#1) Resistor ●. Conversion Transcond., 550 micromhos.				7A8
7B4	High-Mu Triode	B5	$5AC_1$	H	6.3	0.3	Amplifier	For other characteristics, refer to Type 6SF5.										7B4

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THE LAMPHOUSE CARRY ALL TYPES OF VAL

RCA Type	Name	Tube Dimensions and Socket Connections		Cathode Type and Rating			Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias ■ Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-Conductance (Grid-plate) µmhos	Amplification Factor	Load for Stated Power Output Ohms	Power Output Watts	RCA Type
		Dimen.	S. C.	C. T.	Volts	Amp.												
12SC7	Twin-Triode Amplifier	B3	8S	H	12.6	0.15	Amplifier	For other characteristics, refer to Type 6SC7.										**12SC7**
12SF5	High-Mu Triode	B3	6AB	H	12.6	0.15	Amplifier	For other characteristics, refer to Type 6SF5.										**12SF5**
12SF5-GT	High-Mu Triode	C3	G-6AB‡	H	12.6	0.15	Amplifier	For other characteristics, refer to Type 6SF5.										12SF5-GT
12SF7	Diode Supercontrol Amplifier Pentode	B3	7AZ	H	12.6	0.15	Pentode Unit as Amplifier	For other characteristics, refer to Type 6SF7.										**12SF7**
12SG7	HF Amplifier Pentode	B3	8BK	H	12.6	0.15	Amplifier	For other characteristics, refer to Type 6SG7.										**12SG7**
12SH7	HF Amplifier Pentode	B3	8BK	H	12.6	0.15	Amplifier	For other characteristics, refer to Type 6SH7.										**12SH7**
12SJ7	Triple-Grid Detector Amplifier	B3	8N	H	12.6	0.15	Amplifier	For other characteristics, refer to Type 6SJ7.										**12SJ7**
12SJ7-GT	Triple-Grid Detector Amplifier	C3	GT-8N△	H	12.6	0.15	Amplifier	For other characteristics, refer to Type 6SJ7.										**12SJ7-GT**
12SK7	Triple-Grid Supercontrol Amplifier	B3	8N	H	12.6	0.15	Amplifier	For other characteristics, refer to Type 6SK7.										**12SK7**
12SK7-GT	Triple-Grid Supercontrol Amplifier	C3	GT-8N△	H	12.6	0.15	Amplifier	For other characteristics, refer to Type 6SK7.										**12SK7-GT**
12SL7-GT	Twin-Triode Amplifier	C3	8BD	H	12.6	0.15	Each Unit as Amplifier	For other characteristics, refer to Type 6SL7-GT.										**12SL7-GT**
12SN7-GT	Twin-Triode Amplifier	C3	8BD	H	12.6	0.3	Each Unit as Amplifier	For other characteristics, refer to Type 6J5.										**12SN7-GT**
12SQ7	Duplex-Diode High-Mu Triode	B3	8Q	H	12.6	0.15	Triode Unit as Amplifier	For other characteristics, refer to Type 6SQ7.										**12SQ7**
12SQ7-GT	Duplex-Diode High-Mu Triode	C3	GT-8Q△	H	12.6	0.15	Triode Unit as Amplifier	For other characteristics, refer to Type 6SQ7.										**12SQ7-GT**
12SR7	Duplex-Diode Triode	B3	8Q	H	12.6	0.15	Triode Unit as Amplifier	For other characteristics, refer to Type 6SR7.										**12SR7**
12SR7-GT	Duplex-Diode Triode	C3	GT-8Q△	H	12.6	0.15	Triode Unit as Amplifier	For other characteristics, refer to Type 6SR7										**12SR7-GT**
12Z3	Half-Wave Rectifier	D5	4G	H	12.6	0.3	With Capacitive-Input Filter	Max. A-C Plate Volts (RMS), 235 Max. D-C Output Ma., 55				Min. Total Effective Plate-Supply Impedance: Up to 117 volts, 0 ohms; at 150 volts, 30 ohms; at 235 volts, 75 ohms.						**12Z3**
14A7/ 12B7	Triple-Grid Supercontrol Amplifier	B5	8V	H	12.6	0.15	Class A Amplifier	100 250	− 1.0 − 3.0	100 100	4.0 2.6	13.0 9.2	120000 800000	2350 2000	—	—	—	**14A7/ 12B7**
15	RF Amplifier Pentode	D9	5F	D.C. H	2.0	0.22	Class A Amplifier	67.5 135	− 1.5 − 1.5	67.5 67.5	0.3 0.3	1.85 1.85	630000 800000	710 750	—	—	—	**15**
19	Twin-Triode Amplifier	D5	6C	D.C. F	2.0	0.26	Amplifier	For other characteristics, refer to Type 1J6-G.										**19**
20	Power Amplifier Triode	D1	4D	D.C. F	3.3	0.132	Class A Amplifier	90 135	−16.5 −22.5	—	—	3.0 6.5	8000 6300	415 525	3.3 3.3	9600 6500	0.045 0.110	20
22	RF Amplifier Tetrode	E1	4K	D.C. F	3.3	0.132	Screen-Grid RF Amplifier	135 135	− 1.5 − 1.5	45 67.5	0.6* 1.3*	1.7 3.7	725000 325000	375 500	—	—	—	22
24-A	RF Amplifier Tetrode	E1	5E	H	2.5	1.75	Screen-Grid RF Amplifier	180 250	− 3.0 − 3.0	90 90	1.7* 1.7*	4.0 4.0	400000 600000	1000 1050	—	—	—	**24-A**
							Bias Detector	250●	− 5.0 approx.	20 to 45	—	Plate current to be adjusted to 0.1 milliampere with no signal.						
25A6	Power Amplifier Pentode	C2	7S	H	25.0	0.3	Class A Amplifier	95 160	−15.0 −18.0	95 120	4.0 6.5	20.0 33.0	45000 42000	2000 2375	—	4500 5000	0.9 2.2	**25A6**
25A6-GT	Power Amplifier Pentode	C3	G-7S‡	H	25.0	0.3	Class A Amplifier	For other characteristics, refer to Type 25A6.										25A6-GT
25A7-GT	Rectifier Pentode	C3	8F	H	25.0	0.3	Pentode Unit as Class A Amplifier	100	−15.0	100	4.0	20.5	50000	1800	—	4500	0.77	25A7-GT
							Half-Wave Rectifier	Max. A-C Plate Volts (RMS), 117 Max. Peak Inverse Volts, 350				Max. D-C Output Ma., 75 Max. Peak Plate Ma., 450			Min. Total Effect. Supply Impedance, 15 ohms.			
25AC5-GT	High-Mu Power Amplifier Triode	C3	G-6Q‡	H	25.0	0.3	Class B Amplifier	180	0	—	—	4.0♠	—	—	—	4800	6.0	25AC5-GT
							Dynamic-Coupled Amp. With Type 6AE5-GT Driver	110	Bias for both 25AC5-GT and 6AE5-GT developed in circuit. Average Plate Current of Driver = 7 milliamperes. Average Plate Current of 25AC5-GT = 45 milliamperes.							2000	2.0	
25B5	Direct-Coupled Power Amplifier	D9a	6D	H	25.0	0.3	Amplifier	For other characteristics, refer to Type 25N6-G.										25B5
25B6-G	Power Amplifier Pentode	D10	G-7S‡	H	25.0	0.3	Class A Amplifier	105 200	−16.0 −23.0	105 135	2.0 1.8	48.0 62.0	15500 18000	4800 5000	—	1700 2500	2.4 7.1	25B6-G
25B8-GT	Triode-Pentode	C3	8T	H	25.0	0.15	Triode Unit as Class A Amplifier	100	− 1.0	—	—	0.6	75000	1500	112	—	—	25B8-GT
							Pentode Unit as Class A Amplifier	100	− 3.0	100	2.0	7.6	185000	2000	—	—	—	
25C6-G	Beam Power Amplifier	D10	G-7AC‡	H	25.0	0.3	Class A Amplifier	For other characteristics, refer to Type 6Y6-G.										25C6-G
25L6	Beam Power Amplifier	C2	7AC	H	25.0	0.3	Amplifier	For other characteristics, refer to Type 50L6-GT.										**25L6**
25L6-GT	Beam Power Amplifier	C3	G-7AC‡	H	25.0	0.3	Amplifier	For other characteristics, refer to Type 50L6-GT.										**25L6-GT**
25N6-G	Direct-Coupled Power Amplifier	D9	G-7W	H	25.0	0.3	Class A Amplifier	Output Triode: Plate Volts, 180; Plate Ma., 46; Load, 4000 ohms. Input Triode: Plate Volts, 100; Grid Volts, 0; A-F Signal Volts (Peak), 29.7; Plate Ma., 5.8.									3.8	25N6-G
25Y5	Rectifier-Doubler	D5	6E	H	25.0	0.3	Half-Wave Rectifier	Max. A-C Volts per Plate (RMS), 235 Max. D-C Output Ma. per Plate, 75				Min. Total Effective Plate-Supply Impedance per Plate, 0 ohms.						25Y5
25Z5	Rectifier-Doubler	D5	6E	H	25.0	0.3	Rectifier-Doubler	For other ratings, refer to Type 25Z6.										**25Z5**
25Z6	Rectifier-Doubler	C2	7Q	H	25.0	0.3	Voltage Doubler	Max. A-C Volts per Plate (RMS), 117 Max. D-C Output Ma., 75				Min. Total Effective Plate-Supply Impedance: Half-Wave, 30 ohms; Full-Wave, 15 ohms.						**25Z6**
							Half-Wave Rectifier	Max. A-C Volts per Plate (RMS), 235 Max. D-C Output Ma. per Plate, 75				Min. Total Effect. Supply Imped. per Plate: Up to 117 volts, 15 ohms; at 150 volts, 40 ohms; at 235 volts, 100 ohms.						
25Z6-GT	Rectifier-Doubler	C3	G-7Q‡	H	25.0	0.3	Rectifier-Doubler	For other ratings, refer to Type 25Z6.										**25Z6-GT**
26	Amplifier Triode	D12	4D	F	1.5	1.05	Class A Amplifier	90 180	− 7.0 −14.5	—	—	2.9 6.2	8900 7300	935 1150	8.3 8.3	—	—	**26**
27	Detector★ Amplifier Triode	D5	5A$_1$	H	2.5	1.75	Class A Amplifier	135 250	− 9.0 −21.0	—	—	4.5 5.2	9000 9250	1000 975	9.0 9.0	—	—	**27**
							Bias Detector	250	−30.0 approx.	—	—	Plate current to be adjusted to 0.2 milliampere with no signal.						

Discontinued types are shown in light face. Metal and miniature tubes are identified respectively by a narrow or a wide riser preceding or following the type designation.

Type	Name	Tube Dimensions and Socket Connections		Cathode Type and Rating			Use Values to right give operating conditions and characteristics for indicated typical use	Plate Supply Volts	Grid Bias ■ Volts	Screen Supply Volts	Screen Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Transconductance (Grid-plate) µmhos	Amplification Factor	Loa for Stated Power Output Ohms	P Wa	
		Dimen.	S. C.	C. T.	Volts	Amp.												
58	Triple-Grid Supercontrol Amplifier	D13	6F	H	2.5	1.0	Amplifier Mixer	For other characteristics, refer to Type 6U7-G.										58
59	Triple-Grid Power Amplifier	E3	7A	H	2.5	2.0	Triode¶ Class A Amplifier	250	−28.0	—	—	26.0	2300	2600	6.0	5000	1.25	59
							Pentode▪▪ Class A Amplifier	250	−18.0	250	9.0	35.0	55000	2500	—	6000	3.0	
							Triode⊛ Class B Amplifier	300 400	0 0	—	—	20.0♠ 26.0♠	—	—	—	4600 6000	15.0† 20.0†	
70L7-GT	Rectifier-Beam Power Amplifier	C5b	8AA	H	70.0	0.15	Amplifier Unit as Class A Amplifier	110	− 7.5	110	3.0	40.0	15000	7500	—	2000	1.8	70L7-GT
							Half-Wave Rectifier	Max. A-C Plate Volts (RMS), 117 Max. Peak Inverse Volts, 350				Max. D-C Output Ma., 70 Max. Peak Plate Ma., 420			Min. Total Effect. Plate-Supply Imped., 15 ohms			
71-A	Power Amplifier Triode	D12	4D	F	5.0	0.25	Class A Amplifier	90 180	−16.5 −40.5	—	—	10.0 20.0	2170 1750	1400 1700	3.0 3.0	3000 4800	0.125 0.790	71-A
75	Duplex-Diode High-Mu Triode	D9	6G	H	6.3	0.3	Amplifier	For other characteristics, refer to Type 6SQ7.										75
76	Detector Amplifier Triode★	D5	5A$_1$	H	6.3	0.3	Class A Amplifier	250	−13.5	—	—	5.0	9500	1450	13.8	—	—	76
							Bias Detector	250	− 20.0 approx.	—	—	Plate current to be adjusted to 0.2 milliampere with no signal.						
77	Triple-Grid Detector Amplifier	D9	6F	H	6.3	0.3	Class A Amplifier	100 250	− 1.5 − 3.0	60 100	0.4 0.5	1.7 2.3	600000 1.0+§	1100 1250	—	—	—	77
							Bias Detector	250	− 1.95	50	Cathode current 0.65 ma.		—	Plate Resistor, 250000 ohms. Grid Resistor,** 250000 ohms.				
78	Triple-Grid Supercontrol Amplifier	D9	6F	H	6.3	0.3	Amplifier Mixer	For other characteristics, refer to Type 6K7.										78
79	Twin-Triode Amplifier	D9	8H	H	6.3	0.6	Class B Amplifier	180 250	0 0	—	—	Power Output is for one tube at stated plate-to-plate load.				7000 14000	5.5 8.0	79
80	Full-Wave Rectifier	D12	4C	F	5.0	2.0	For other ratings, refer to Type 5Y3-GT.											80
81	Half-Wave Rectifier	F1	4B	F	7.5	1.25	With Capacitive-Input Filter	Max. A-C Plate Volts (RMS), 700 Max. Peak Inverse Volts, 2000						Max. D-C Output Ma., 85 Max. Peak Plate Ma., 500				81
82	Full-Wave▶ Rectifier	D12	4C	F	2.5	3.0	With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 450 Max. Peak Inverse Volts, 1550				Max. D-C Output Ma., 115 Max. Peak Plate Ma., 600			Min. Total Effect. Supply Imped. per Plate, 50 ohms.			82
							With Inductive-Input Filter	Max. A-C Volts per Plate (RMS), 550 Max. Peak Inverse Volts, 1550				Max. D-C Output Ma., 115 Max. Peak Plate Ma., 600			Min. Value of Input Choke, 6 henries			
83	Full-Wave▶ Rectifier	E3	4C	F	5.0	3.0	With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 450 Max. Peak Inverse Volts, 1550				Max. D-C Output Ma., 225 Max. Peak Plate Ma., 1000			Min. Total Effect. Supply Imped. per Plate, 50 ohms.			83
							With Inductive-Input Filter	Max. A-C Volts per Plate (RMS), 550 Max. Peak Inverse Volts, 1550				Max. D-C Output Ma., 225 Max. Peak Plate Ma., 1000			Min. Value of Input Choke, 3 henries			
83-V	Full-Wave Rectifier	D12	4AD	H	5.0	2.0	For other ratings, refer to Type 5V4-G.											83-V
84/6Z4	Full-Wave Rectifier	D5	5D	H	6.3	0.5	With Capacitive-Input Filter	Max. A-C Volts per Plate (RMS), 325 Max. Peak Inverse Volts, 1250				Max. D-C Output Ma., 60 Max. Peak Plate Ma., 180			Min. Total Effect. Supply Imped. per Plate, 150 ohms.			84/6Z4
							With Inductive-Input Filter	Max. A-C Volts per Plate (RMS), 450 Max. Peak Inverse Volts, 1250				Max. D-C Output Ma., 60 Max. Peak Plate Ma., 180			Min. Value of Input Choke, 10 henries			
85	Duplex-Diode Triode	D9	6G	H	6.3	0.3	Triode Unit as Class A Amplifier	135 250	−10.5 −20.0	—	—	3.7 8.0	11000 7500	750 1100	8.3 8.3	25000 20000	0.075 0.350	85
89	Triple-Grid Power Amplifier	D9	6F	H	6.3	0.4	As Triode¶ Class A Amplifier	160 250	−20.0 −31.0	—	—	17.0 32.0	3300 2600	1425 1800	4.7 4.7	7000 5500	0.30 0.90	89
							As Pentode▪▪ Class A Amplifier	100 250	−10.0 −25.0	100 250	1.6 5.0	9.5 32.0	104000 70000	1200 1800	—	10700 6750	0.33 3.40	
							As Triode⊛ Class B Amplifier	180	0	—	—	6.0♠	—	—	—	13600 9400	2.50† 3.50†	

(Chart II continued on next page.)

Discontinued types are shown in light face. Metal and miniature tubes are identified respectively by a narrow or a wide riser preceding or following the type designation.

★ For Grid-leak Detection—plate volts 45, grid return to + filament or to cathode.

■ Either A. C. or D. C. may be used on filament or heater, except as specifically noted. For use of D.C. on A-C filament types, decrease stated grid volts by ½ (approx.) of filament voltage.

◥ Supply voltage applied through 20000-ohm voltage-dropping resistor.

▶ Mercury-Vapor Type.

▪▪ Grid #1 is control grid. Grid #2 is screen. Grid #3 tied to cathode.

¶ Grid #1 is control grid. Grids #2 and #3 tied to plate.

⊛ Grids #1 and #2 connected together. Grid #3 tied to plate.

▣ Grids #3 and #5 are screen. Grid #4 is signal-input control grid.

▲ Grids #2 and #4 are screen. Grid #1 is signal-input control grid.

** For grid of following tube.

• Both grids connected together; likewise, both plates.

† Power output is for two tubes at stated plate-to-plate load.

♠ For two tubes.

‡ This diagram is like the one having the same designation without the prefix G, except that Pin No. 1 has no connection.

♣ Obtained preferably by using 70000-ohm voltage-dropping resistor in series with a 90-volt supply

✕ This diagram is like the one having the same designation with the prefix G, except that base sleeve is connected to Pin No. 1.

‡‡ This diagram is like the one having the same designation without the prefix G, except that Pin No. 1 is connected to internal shield.

♀ Panel lamp section is between pins 2 and 3.

✠ Grids #2 and #3 tied to plate.

AA Both grids connected together; likewise both cathodes.

⚘ This diagram is like the one having the same designation without the prefix GT, except that the base sleeve is connected to Pin No. 1.

● Applied through plate resistor of 250000 ohms or 500-henry choke shunted by 0.25-megohm resistor.

♥ Applied through plate resistor of 100000 ohms.

✖ Applied through plate resistor of 250000 ohms.

◒ 50000 ohms.

⧸ Requires different socket from small 7-pin.

☐ Grid #2 tied to plate.

♦ Grids #1 and #2 tied together.

♁ Plate voltages greater than 125 volts RMS require 100-ohm (minimum) series-plate resistor.

°° Applied through plate resistor of 150000 ohms.

◖ For signal-input control-grid (#1); control-grid #3 bias, −3 volts.

▣ Applied through 200000-ohm plate resistor.

▲ Grids #2 and #4 are screen. Grid #3 is signal-input control grid.

*Maximum.

§Megohms.

Note 1: Types with octal bases have *Miniature Cap;* all others have *Small Cap.*

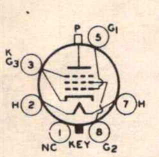
Note 2: Subscript 1 on class of amplifier service (as AB$_1$) indicates that grid current does not flow during any part of input cycle.

Subscript 2 on class of amplifier service (as AB$_2$) indicates that grid current flows during some part of the input cycle.

KEY TO TUBE DIMENSIONS

Symbol	Maximum Overall Length x Diameter	Symbol	Maximum Overall Length x Diameter	Symbol	Maximum Overall Length x Diameter	Symbol	Maximum Overall Length x Diameter	Symbol	Maximum Overall Length x Diameter
A1	1 3/4" x 1 3/4"	B5a	2 7/8" x 1 5/16"	C7a	3 9/16" x 1 5/16"	D8	4 15/32" x 1 9/16"	E3	5 3/8" x 2 1/16"
A1a	1 3/4" x 1 5/16"	C0	3 1/16" x 1 5/16"	C8	3 3/4" x 1 3/16"	D9	4 17/32" x 1 9/16"	F1	6 1/4" x 2 7/16"
B0	2 1/8" x 3/4"	C1	3 1/8" x 1 5/16"	D1	4" x 1 3/16"	D9a	4 19/32" x 1 9/16"	F1a	6 7/32" x 2 1/16"
B0a	2 3/16" x 7/8"	C2	3 1/4" x 1 5/16"	D1a	4 1/16" x 1 5/16"	D10	4 5/8" x 1 13/16"	G1	8" x 2 1/16"
B1	2 5/8" x 1 1/16"	C3	3 5/16" x 1 5/16"	D2	4 1/8" x 1 3/16"	D11	4 11/16" x 1 7/16"	H1	12 1/8" x 5 1/8"
B1a	2 5/8" x 3/4"	C4	3 1/2" x 1 1/16"	D3	4 1/8" x 1 9/16"	D12	4 11/16" x 1 13/16"	I1	14 7/16" x 7 5/16"
B2	2 3/16" x 1 5/16"	C5a	3 1/2" x 1 5/16"	D4	4 3/16" x 1 3/16"	D12a	4 7/8" x 1 9/16"	I1a	14 7/8" x 7 1/8"
B3	2 5/8" x 1 5/16"	C5b	3 7/16" x 1 5/16"	D5	4 3/16" x 1 9/16"	D13	4 15/16" x 1 9/16"	J1	18" x 10 5/8"
B4	2 17/32" x 1 5/16"	C6	3 5/32" x 1 3/16"	D6	4 5/16" x 1 3/16"	E1	5 1/32" x 1 13/16"	K1	21 3/8" x 9 1/8"
B5	2 25/32" x 1 3/16"	C7	3 3/8" x 1 5/16"	D7	4 5/16" x 1 5/8"	E2	5 5/16" x 2 1/16"	L1	25 3/8" x 12 3/16"

Socket Connections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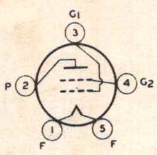
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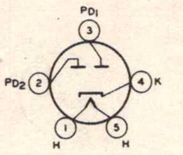
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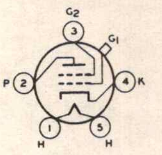
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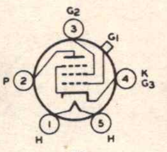
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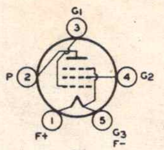
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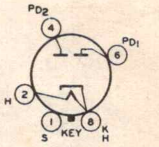
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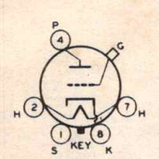
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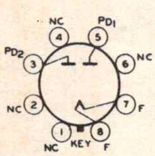
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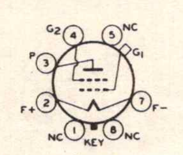
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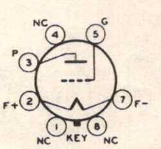
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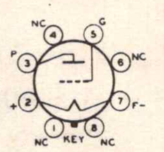
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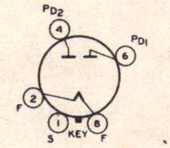
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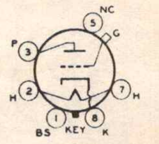
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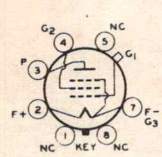
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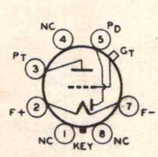
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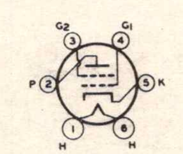
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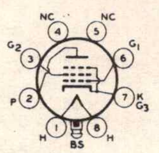
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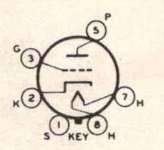
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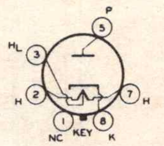
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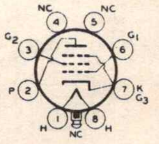
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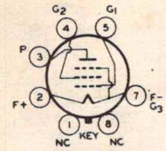
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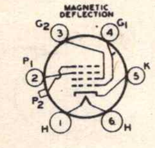
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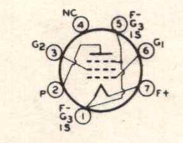
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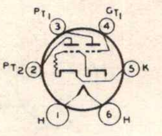
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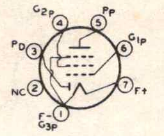
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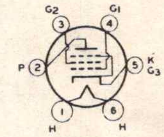
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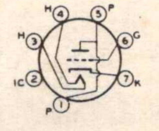
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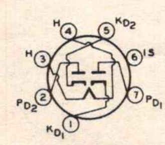
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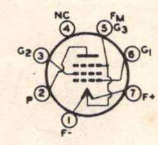
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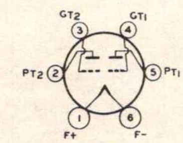
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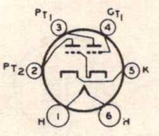
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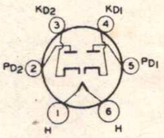
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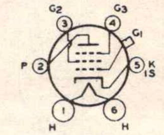
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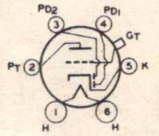
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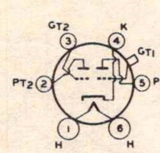
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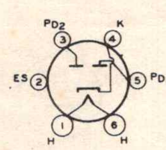
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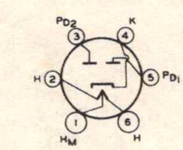
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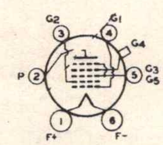
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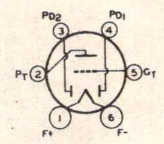
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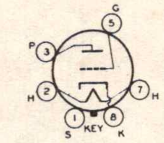
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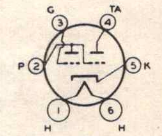
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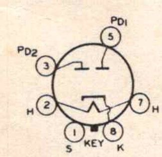
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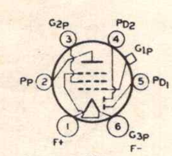
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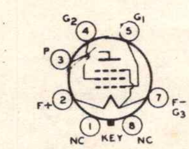
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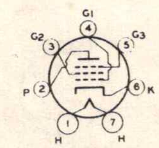
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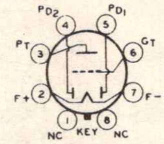
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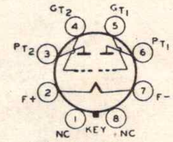
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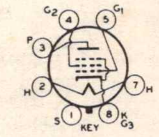
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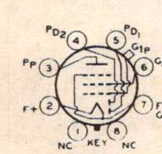
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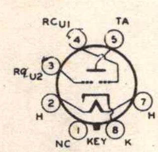
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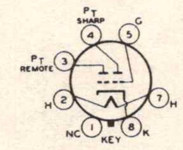
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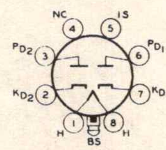
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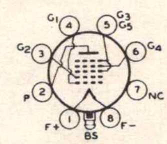
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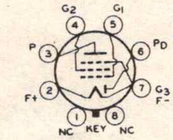
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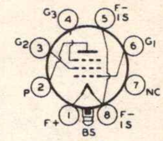
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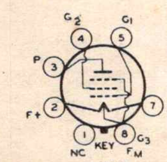
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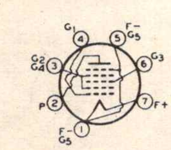
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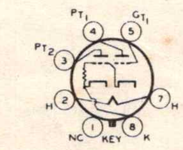
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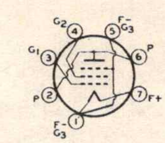
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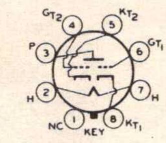
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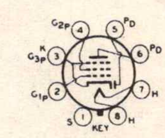
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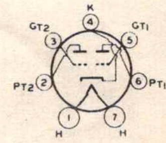
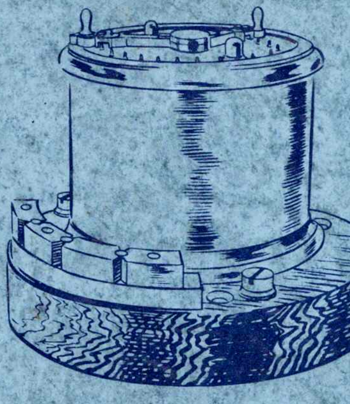

7B

SURPLUS TELEGRAPH EQUIPMENT

Obsolete Telegraph Equipment. Experimenters, Hams, and others will find many uses for this well-made, and ruggedly-built telegraph equipment. Order early—supplies are limited.

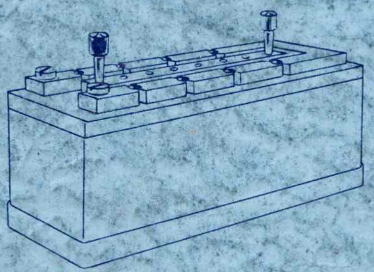
CIRCULAR RHEOSTATS



Heavy type variable Resistances, wood base, heavy brass case. Variable from 0 to 4000 ohms by means of two moving arms. Size 6in. diameter, 5in. high. Used.
Cat. No. AX1491 .. .. **12/6** each

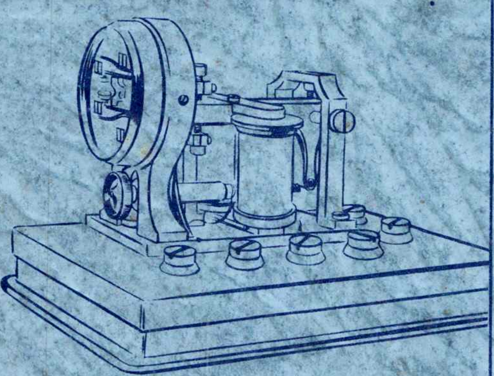
Same as above but slightly damaged.
Cat. No. AX1491A .. .. **9/6** each

RESISTANCE BOXES



Contains a large number of resistance coils. Range 0/1100 ohms and variations can be obtained in 10 ohm steps by means of plugs. 6½in. x 2¾in. x 3in. high. Used. Very accurate.
Cat. No. AX1490 .. .. **15/-** each

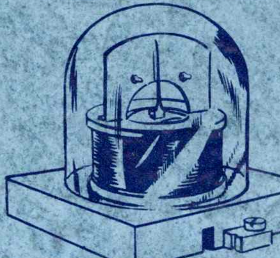
TELEGRAPH POLE CHANGERS



Pole Changers as used in telegraph systems. Mounted on teak wood base. Size 4½in. x 6in. x 5in. high. Used.
Cat. No. AX1492 .. .. **12/6** each

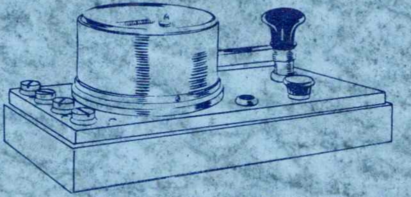
As above but slightly damaged
Cat. No. AX1492A .. .. **9/6** each

GALVANOMETERS



Siemen's Bros. Galvanometers, mounted on wood base and complete with glass dome protection, 4in. x 4in. x 4¾in. high. Used.
Cat. No. AX1501 .. .. **12/6** each

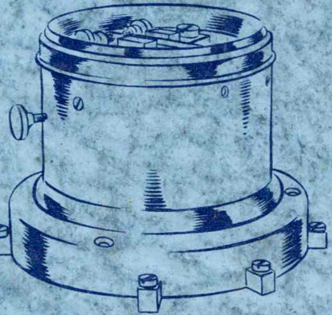
TELEGRAPH KEY



Morse Telegraph key. Really high-class job. Six terminal reversing type. Glass protected. Used.
Cat. No. AX1497 .. .. **15/-** each

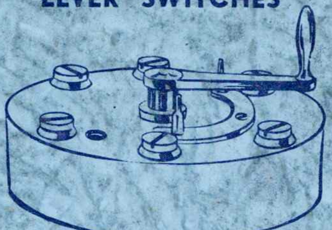
As above but slightly damaged.
Cat. No. AX1497A .. .. **9/6** each

TELEGRAPH RELAYS



Telegraph Relays mounted on wood base. Brass case glass cover, heavy construction, 5½in. diameter, 4in. high.
Cat. No. AX1505 .. .. **10/-** each

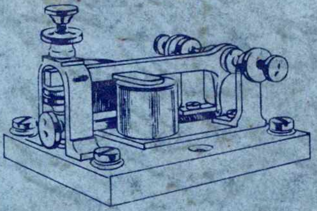
LEVER SWITCHES



Telegraph-type Lever Switches mounted on round wood base of 4in. diameter., solid brass fittings. Single pole change-over (2 circuit) type. Used.
Cat. No. AX1498 .. .. **2/-** each

Similar to above but 3 circuit, 2-way. Used.
Cat. No. AX1499 .. .. **2/-** each

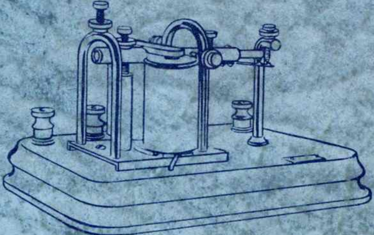
SOUNDERS



Telegraph-type Sounders mounted on wood base. Heavy brass terminals and fittings, 4½in. x 4½in. x 4in. high. Used.
Cat. No. AX1500 .. .. **7/6** each

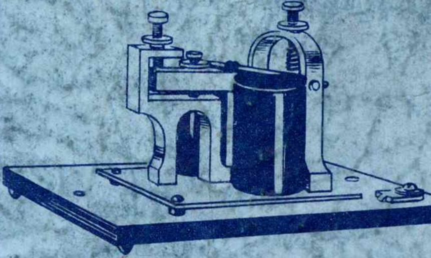
As above but slightly damaged.
Cat. No. AX1500A .. .. **4/6** each

TELEGRAPH TRANSMITTERS



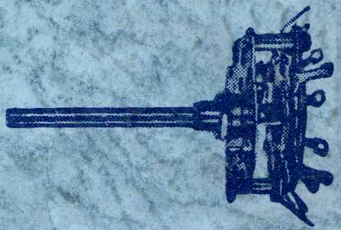
Western-Electric quad-type telegraph transmitters, 8in. x 4½in. x 4¾in. high. Used.
Cat. No. AX1493 .. .. **10/-** each

TELEGRAPH SOUNDERS



Western-Electric type 3C, 140 ohm Telegraph Sounders. Size 5½in. x 3in. x 4in. high. Brand new.
Cat. No. AX1494 .. .. **17/6** each

WAFER TYPE SWITCHES



Single-bank Wafer Switches, with ¼in. diameter shafts fitted for lock nut for panel mounting.

Cat. No. AX1495—1 pole, 5 way **3/6** each
Cat. No. AX1496—4 pole, 2 way **3/6** each